



INTERNATIONAL MEDICAL CONGRESS OF SILESIA

**Katowice Ligota**  
25 – 26 th April 2018

# ABSTRACT BOOK



STUDENTS' SCIENTIFIC ASSOCIATION  
OF THE  
MEDICAL UNIVERSITY OF SILESIA



DOCTORAL STUDENTS' GOVERNMENT  
OF THE  
MEDICAL UNIVERSITY OF SILESIA

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**Dear Students,**

**The International Medical Congress of Silesia 2018 - "SIMC 2018" has been a continuation of the International and Interfaculty Conference of Students of Medical Universities, organized by Students' Scientific Association of Medical University of Silesia since 2006. It has become an annual event directed to young scientists.**



**Each year hundreds of students from Polish and foreign medical universities take active participation in the Conference. SIMC gives all of these young people the opportunity to present their research and to build up relations with other medical students from all over the world. I am glad that our University is a host this wonderful event.**

**I would like to express my appreciation to the Organizing Committee. It is thanks to your hard work that this event is held at a highest substantive standard when it comes to not only presented papers and discussions but also the professional organization. I am convinced that the scientific program and the accompanying events prepared by you will meet the expectations of attendees.**

**Finally, I wish all of the participants many scientific successes and persistence in pursuit of chosen life goals. I hope that this event will be an unforgettable experience for all of you.**

**RECTOR  
OF MEDICAL UNIVERSITY OF SILESIA  
PRZEMYSŁAW JAŁOWIECKI, MD, PhD, Professor of Medicine**





**Dear Colleagues,**

**Another year has passed and we meet again to participate in this very special event – INTERNATIONAL MEDICAL CONGRESS of SILESIA (SIMC) organized by Students' Scientific Society of Medical University of Silesia in Katowice.**

**It is a great honour to invite you to participate in the conference. I am pleased to say that this year, we are able once again to organize the conference together with participants of postgraduate studies. They enrich the conference with new sessions. It is also a great joy to see the growing and continuing popularity of workshops which became the inseparable addition to the SIMC programme. Your energy, engagement and creativity seem to have no limits. The true success of the conference is best reflected in the number of applicants registered. I must say that I was**

**also impressed by the number of papers and sessions prepared for the conference. It does undoubtedly prove enormous potential and excellent abilities students of our Alma Mater possess. And so do our guest participants who come ever in greater number from many different medical universities both in Poland and abroad.**

**I encourage you to support this conference actively. It is an opportunity for regular participants of STN conference as well as for those who have decided to face that challenge for the first time.**

**Remember – medicine should be a passion. Science can become your way to succeed professionally and also to follow your life passion. STN conference is a great opportunity to exchange first and fresh scientific experience. Therefore it is of utmost importance that you keep on challenging yourself to prove your professional skills and abilities. It is extremely important especially at the start of your career in this field, the moment you shape your future and develop.**

**I truly believe that both the organizers and participants will spare no effort to make this special event enjoyable and fruitful.**

**See you on 25-th of April on the campus of Medical University of Silesia in Katowice.**

**The head of  
Students' Scientific Association  
of Medical University of Silesia in Katowice  
Prof. Katarzyna Mizia-Stec**

**Dear Participants!**

**The First Conference organized by Students' Scientific Society of the Medical University of Silesia took place in December 1954 in Zabrze - Rokitnica. Throughout all these years our Conference grew up in numbers of presented papers and was moved permanently to the grounds of university campus in Katowice-Ligota. Ten years ago the Conference was officially named as international. Nowadays it is one of the largest Students Conferences in Poland and Central Europe.**

**In 2018 the honor of organization of the INTERNATIONAL MEDICAL CONGRESS OF SILESIA (SIMC) 2018 fell to our Board. Over 450 papers were sent this year and divided between 32 scientific sessions. All participants have once again put their confidence in us and decided to share with others the results of their many months of research. Once again they will meet in the halls of the Medical University of Silesia in Katowice. We are extremely proud of the growing popularity of sessions aimed at doctoral students. This was possible thanks to the continuing friendship and cooperation with the Doctoral Students' Self-Government. We also do our best to extend the programme of workshops, which allow the participants to improve their practical skills.**

**The purpose of the Conference has remained unchanged throughout the years. Every year we make our best efforts to make this event not only an occasion for new scientific experiences, but also a fascinating adventure and preparation for future scientific challenges.**

**We would like to extend our sincere thanks to the Rector of the Medical University of Silesia in Katowice Prof. Przemysław Jałowiecki PhD, MD, Vice-Rector for Academic Affairs Prof. Joanna Lewin-Kowalik PhD, MD, Curator of the Students' Scientific Society Prof. Katarzyna Miza-Stec, PhD, MD, Chancellor of MUS, Bernadeta Kuraszewska, PhD, MD and the administrative staff, for all assistance and support in overcoming organizational difficulties.**

**We express our gratitude to Dorota Wrześniok, PhD, MD, for giving an honorary lecture for the participants of our Conference. We sincerely thank the Members of the Scientific Committees of individual sessions. Every year, they devote a lot of time to share their knowledge and experience.**

**We extend our gratitude to the Members of Doctoral Students' Self-Government who supported us and took responsibility for the organization of doctoral sessions. Our thanks are due also to those who helped and supported us during organization of practical workshops.**

**Last but not least we would like to thank all of the participants of this year's edition for all your creative work, ambitions and ingenuity in the conducted research.**

**We wish you many successes!**

**The Board of Students' Scientific Association  
of Medical University of Silesia**

**“Be like the fountain that overflows, not like the cistern that merely contains.”**

**( P. Coelho)**

**Dear Participants and Colleagues**

**On behalf of the Doctoral Students’ Self-Government we would like to express our thanks for the possibility of participation and co-creation of the International Medical Congress of Silesia (SIMC) 2018, beside the Students’ Scientific Association of the Medical University of Silesia. We believe profoundly that continuing agreement between students and PhD students paves the way for a beneficial cooperation, based on exchanging views and experiences in order to develop friendship and mutual respect .**

**We are convinced that the subjects and specific issues addressed during this Conference are found among issues currently facing us - young researchers. Sessions that have been prepared for you will not only be an opportunity to present your research results, but also to exchange opinions and provide inspirational experience for every participant. We hope that all workshops organized this year, will be a valuable opportunity to improve your practical skills.**

**We extend our sincere gratitude to the Rector of the Medical University of Silesia in Katowice Prof. Przemysław Jałowicki, PhD, MD, Vice-Rector for Postgraduate Training Prof. Stanisław Boryczka, PhD, MD, Vice-Rector for Academic Affairs Prof. Joanna Lewin-Kowalik, PhD, MD, Chancellor of MUS, Bernadeta Kuraszewska, PhD, MD and all of the workshops organizers and administrative staff for their help and support. We sincerely thank Dorota Wrześniok, PhD, MD for giving an honorary lecture and all of the Members of the Scientific Committees for the time they devoted, valuable comments and exchange of experiences.**

**In addition to the words of appreciation , we invite you to familiarize yourself with the subjects of papers presented at each session, in particular by the PhD students, who will always be willing to share the knowledge they gained through constantly drilling the ravine for the source of their scientific development.**

**The Board of the Doctoral Students’ Self-Government  
of the Medical University of Silesia**

# CONFERENCE'S PLAN

## WEDNESDAY, 25<sup>TH</sup> APRIL 2018

7 <sup>30</sup> – 8 <sup>30</sup>	Participant's registration
9 <sup>00</sup> – 12 <sup>00</sup>	Plenary sessions – part I
9 <sup>30</sup> – 18 <sup>00</sup>	Practical Workshops
12 <sup>00</sup> – 12 <sup>30</sup>	Break time
12 <sup>30</sup> – 14 <sup>00</sup>	Plenary sessions – part II

## THURSDAY, 26<sup>TH</sup> APRIL 2018

7 <sup>00</sup> – 8 <sup>00</sup>	Participant's registration
8 <sup>30</sup> – 13 <sup>00</sup>	Plenary sessions
8 <sup>30</sup> - 15 <sup>00</sup>	Practical Workshops
15 <sup>30</sup>	The Closing Ceremony: Dorota Wrzeźniok MD, Ph.D. honorary lecture Awards announcement
21 <sup>00</sup>	Party in "Królestwo" Club



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INTERNATIONAL MEDICAL CONGRESS OF SILESIA

# SESSION OF DOCTORAL CLINICAL MEDICINE



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## **Salivary cortisol correlation with clinical presentation of negative symptoms in patients with schizophrenia, treated with atypical antipsychotics**

Dominika Tobolska, Krzysztof Wilczyński, Miłosz Lorek, Dominika Wizner-Wilczyńska, Elżbieta Mazgaj

Medical University of Silesia in Katowice

Work's tutor: Asst. Prof. Aneta Gawlik

Schizophrenia is a term describing group of debilitating mental disorders, characterized by presence of inter alia hallucinations, delusions and cognitive deficits. Its pathogenesis remains a contentious issue, with diathesis-stress model being a leading hypothesis.

It was of the interest, if the cortisol concentrations in patients currently under treatment with atypical antipsychotics, correlate with clinical presentation measured by the positive and negative symptoms of schizophrenia scale (PANSS).

Participants were divided into two groups. First one, contained persons with confirmed diagnosis of schizophrenia, currently treated with atypical antipsychotics (n=31; 36,7 years). Second one, consisted of healthy individuals, with no history of mental or endocrinological disease (n=38; 23,5 years). 4 samples of saliva were collected from each participant, between 1 to 2 hours from awakening and before breakfast and oral hygiene. After acquisition, all participants from study group were examined using PANSS scale.

Basal cortisol concentration in study group equaled 33,94 nmol/l (95%CI:26,87-41,01) and was statistically significantly higher than in control group (23,96 nmol/l; 95%CI:19-28,91; p=0,0211). There was a statistically significant correlation between PANSS negative symptoms (r=0,732; p<0,0001) and general psychopathology (r=0,458; p=0,003) scales and basal cortisol concentrations.

Elevated basal cortisol concentration in patients with schizophrenia, despite treatment with atypical antipsychotic drugs, may reflect general distress associated with influence of negative symptoms on daily life of patients

**Keywords: Salivary cortisol PANSS schizophrenia**

## **Calcified carotid atherosclerotic plaques - do they correlate with ischaemic changes of the brain?**

Szymon Ciuk, Iwona Kucybała, Katarzyna Ciuk

Wroclaw Medical University  
Department of General Radiology, Interventional Radiology and  
Neuroradiology

Coronary Artery Calcium Score is a well-known predictor of cardiovascular risk, but existence of analogous risk factors of brain ischaemic disease are still a matter of debate.

The aim of the study was to evaluate the correlation between brain ischaemic changes and the presence of calcified carotid atherosclerotic plaques.

The study group consisted of 201 patients, who underwent unenhanced computed tomography (CT) of head with subsequent CT angiography (CTA) of head and neck. 57.2% of patients were female. Mean age was  $52.6 \pm 19.6$  years. Firstly, presence of calcified carotid atherosclerotic plaques, complete carotid occlusion, carotid artery kinking and vertebral artery hypoplasia was assessed on CTA. Then, head CT was screened for ischaemic stroke, minor ischaemic changes, leukoaraiosis and global cortical atrophy.

Incidence of calcified atherosclerotic plaques in carotid arteries was 50.2%. Patients with calcified plaques were more likely to have ischaemic stroke ( $p=0.003$ ,  $OR=4.356$ ), minor ischemic changes ( $p<0.001$ ,  $OR=5.041$ ), leukoaraiosis ( $p<0.001$ ,  $OR=16.970$ ) and global cortical atrophy ( $p<0.001$ ,  $OR=9.129$ ). Stroke significantly more often was located ipsilateral to carotid occlusion (right side:  $p<0.001$ ,  $OR=40.500$ ; left side:  $p<0.001$ ,  $OR=31.000$ ).

There is a strong correlation between the presence of calcified carotid atherosclerotic plaques and the occurrence of ischemic changes in the brain.

**Keywords:** calcified carotid atherosclerotic plaques, ischaemic stroke, ischaemic brain disease, minor ischaemic changes

## **The effect of low glicemic load reducing diet in a patient with PCOS and insulin resistance – a case study**

Małgorzata Słoma, Nicola Szeja, Izabella Krenzel

Medical University of Silesia in Katowice  
School of Public Health in Bytom  
Department of Basic Medical Sciences

Work's tutor: Dr hab. n. med. Brygida Adamek

Polycystic Ovary Syndrome (PCOS) is a complex endocrinological disorder of which the most distinctive features are: ovary dysfunction which causes menstrual cycle disorder and infertility along with carbohydrates management disorders. Among others these include insulin resistance, defined as an impairment of tissue sensitivity to insulin, despite its normal or raised serum level concentration. This phenomenon is more often observed in people with excessive body weight.

Evaluation of the effect of the low glicemic load reducing diet in a patient with PCOS, insulin resistance, obesity and hyperinsulinemia.

The woman at the age of 32 years old with a PCOS diagnosed 2 years ago (weight 80.8kg, height 1.76m, BMI=26 kg/m<sup>2</sup>) referred to Metabolic Disorders Clinic. Laboratory test results has revealed insulin resistance (HOMA-IR: 2.86) and hyperinsulinemia (insulin: 60' 202 mU/l, 120': 78,3 mU/l). For the period of 3 months a low glicemic load reducing diet and a moderate physical activity were implemented.

After 3 months of therapy patient weight has decreased by 12.7 kg (BMI = 22 kg/m<sup>2</sup>). A reemission of hyperinsulinemia was recorded (HOMA-IR: 1,43) and insulin blood level normalization (insulin 60' 77.1 mU/l, 120' 16.7 mU/l).

A balanced low glicemic load reducing diet implemented for a period of 3 months resulted in a significant body weight loss and an improvement of carbohydrates management parameters.

**Keywords: PCOS, insulin resistance, low glicemic load reducing diet**

## **Assessment of the influence of magnetostimulation treatment on the values of glucose concentrations of patients chronic dialysis**

Wioletta Marek<sup>1</sup>, Andrzej Zachwieja<sup>2</sup>, Joanna Kolacz<sup>3</sup>

1. Medical University of Silesia in Katowice, Faculty of Health Sciences, Department of Health Promotion and Community Nursing

Work's tutor: Dr Halina Romualda Zięba

2. University School of Physical Education in Krakow, Faculty of Motor Rehabilitation, Department of Social Foundations In Rehabilitation, Section of Sport for Disabled Persons

3. Dialysis Centre Department Zakopane

One of the more frequent tests in hemodialysis patients is the determination of blood glucose. The study is the basis for the diagnosis of diabetes, but it is also an indicator considered during many other therapies accompanying hemodialysis, e.g. magnetostimulation.

The aim of the study was to analyze the glucose level in dialysis patients undergoing magnetostimulation.

The study involved 46 patients (30 men, 16 women). From the study group, 14 subjects (10 men and 4 women) with insulin-dependent type 2 diabetes were separated. The age range of the studied group ranged between 38-79 years. The research was carried out on January 17, 2018 - January 18, 2018. patients with CKD Stage V undergoing hemodialysis three times a week. hemodialysis session an average of 240 minutes in dialysis centers in Zakopane participating 20 min. magnetostimulation.

In patients who did not eat meals and fluids during HD procedures and magnetostimulation, a dialysis fluid with glucose was used which led to a physiological decrease in glucose in the patient's body or a glucose value close to the initial value. In patients who consumed food and liquids, comparable glucose values were observed before and after HD and magnetostimulation with an upward trend.

The degree of patients' conduction affects the glucose parameters in the body of the examined patients. Consumption of a meal or fluids influenced the change of the glucose value and the quality of magnetostimulation (greater sensitivity to stimulus).

**Keywords: chronic kidney disease, hemodialysis, magnetostimulation, glucose level**

## **A Fitz-Hugh-Curtis syndrome mimicking inflammatory diseases of bile duct**

Naziia Maiura

Sumy State University, Medical Institute, Chair of Surgery and  
Onkology

Work's tutor: Dr. n. med., professor Kononenko M.G.

The study is devoted to learn of the role of Fitz–Hugh–Curtis syndrome in the development of pain in the right upper quadrant of the abdominal cavity. This disease significantly affects the quality of life in patients, because of its ability to mimic for acute or chronic inflammatory diseases of the hepatobiliary zone, residual effects of inflammatory diseases of the upper respiratory tract, or is regarded as incomplete structural and functional compensation after surgical interventions on the bile duct.

We studied clinical, laboratory and instrumental data of 41 patients. They were divided into two groups. The first group was composed of 30 patients, who undergone surgical treatment during the study. 11 patients related to the second group had a laparoscopic cholecystectomy before study or no indications to surgery during the study. We studied serum levels of IgM and IgG to *Chlamydia trachomatis* in all patients. In patients of the first group we also searched the gene of *Chlamydia trachomatis* in biopsy material by polymerase chain reaction.

We found a reliable correlation between right upper quadrant pain and signs of Chlamydial infection on patient with Fitz-Hugh-Curtis syndrome.

**Keywords:** Fitz-Hugh-Curtis syndrome, cholecystitis, perihepatitis, postcholecystectomy syndrome

## The incidence of thermal skin burns in children, according Grodno region

Aliaksandr Hlutkin, Evgeniya Burak, Nataliya Hlutkina

Grodno State Medical University Faculty of Medicine  
Department of pediatric surgery

Work's tutor: Dr. n. med. Viktor Kovalchuk

One of the leading places of domestic injuries belongs to thermal burns of the skin, which are the most common type of childhood injuries. About 10 thousand children apply for inpatient medical care in the Republic of Belarus every year.

To study the prevalence of thermal burns of the skin in children on the basis of data from Grodno regional children's clinical hospital.

A retrospective analysis of 467 medical histories with thermal lesions during inpatient treatment in Grodno regional children's clinical hospital for the period 2013-2017 was carried out.

In total, 467 patients with thermal trauma were hospitalized in 2013-2017, 78% of them were hospitalized in the emergency surgery Department, and 22% - intensive care unit with signs of burn shock. By gender: 40%, boys – 60%. By age: up to 1 year 39%, from 1 year to 3 years – 48%, older than 3 years - 13%. The most common thermal agent acting on the child's skin: hot liquids - 96% water – 67%, tea 18%, coffee 10%, broth – 13 3,7%, milk – by 1.3%. Distribution of children by days of burn injury: Monday 18%, Tuesday – 14,7%, medium – 14.5 per cent, Thursday to 14.5%, Friday – to 12.2% on Saturday and 13.3%, Sunday is 12.7%. According to our data, in the overall structure of hospitalized patients, the most common burn injury is observed in the summer – 26.6% of the person and in the fall – 27%, during maximum activity. In spring-26%, and in winter – 20.4%.

The analysis of burn injury in children provided to establish the influence of epidemiological factors on the formation of children's burn injury in the Grodno region, which will create an algorithm of preventive measures.

**Keywords:** thermal burn, wound, children

## Comparison of sugammadex and neostigmine with reversal of neuromuscular blockade in pediatric patients

Mirosław Malec

Poznan University of Medical Science Faculty of Pharmacy

Work's tutor: dr hab. Agnieszka Bienert

Muscle relaxants are used during intraoperative period to facilitate endotracheal intubation, ensure patient immobility and improve surgical exposure. Reversal agents are used to terminate the action of muscle relaxants. None of the commonly used reversal agents, such as neostigmine or edrophonium are capable of reliably reversing profound blockade. Sugammadex, is the first selective relaxant binding agent. It does not interact with cholinergic mechanisms to elicit reversal. Due to its 1:1 binding of rocuronium or vecuronium, it is able to reverse any depth of neuromuscular block. So far, it has been approved for use in adult patients and for pediatric patients over 2 years.

The aim of the study was to compare time required to obtain the TOF ratio  $\geq 90\%$  using sugammadex and neostigmine in pediatric patients.

These are preliminary studies. Fifteen patients (aged 6 – 17) undergoing elective surgery procedures were randomly divided into either of neostigmine ( $n = 7$ ) or sugammadex ( $n=8$ ) group in which muscle relaxant was reversed at the end of anesthesia either with neostigmine 0,04 mg/kg added to atropine 0,02 mg/kg or sugammadex 2 mg/kg alone, respectively. The primary endpoint was the time from the administration of sugammadex or neostigmine to recovery of the train of four (TOF) ratio to 90% after rocuronium-induced neuromuscular block.

The time to achieve TOF ratio of 90% was shorter in sugammadex group ( $1,35 \pm 0,65$  min) than in neostigmine group ( $27,21 \pm 2,34$  min).

Sugammadex rapidly and effectively reverses rocuronium-induced NMB in pediatric patients.

**Keywords:** Sugammadex, neostigmine, pediatric patients, anesthesia, neuromuscular blockade



## **Usefulness of Drug Allergy Passport in the drug allergy management – observation after 3 and 6 months**

Olga Branicka

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Work's tutor: dr hab.n.med. Joanna Glück

Drug hypersensitivity reactions are a major problem for healthcare system. The number of people with hypersensitivity to drugs increase but not everyone is aware of which drugs they can safely use.

Assess the usefulness of a drug allergy passport in patients with drug allergies.

The study was conducted in patients with confirmed hypersensitivity to drugs by issuing a drug passport at the discharge. The study was carried out with the questionnaire method, by phone after 3 and 6 months.

54 people were contacted by phone after 3 months and 49 after 6 months. After 6 months 38(77%) patients used the passport several times, 7(14%) once, while 4(9%) did not use it, because they did not visit any doctor during that time. Among patients who used the passport 33(67%) showed it to a family doctor, 38(77%) to a narrow specialist, 8(16%) to a dentist and 5(10%) to a pharmacist. 3(6%) people declared that they always carry it with them because they feel safe. 42 doctors to whom the passport was shown followed the recommended drugs. In 47 patients no hypersensitivity reaction occurred with the selected alternative drugs, in 2 patients it occurred. 48(98%) of the patients did not take medications that could potentially cause a hypersensitivity reaction, 1(2%) the patient for therapeutic reasons took it and a hypersensitivity reaction occurred. 47(96%) patients rated the passport as very useful only 2(4%) as not useful.

Results of the analysis of the drug allergy passport show an increase in the sense of security and awareness in patients with drug hypersensitivity reactions. Doctors can choose the safest drugs and adequate therapy.

**Keywords:** drug hypersensitivity reactions, allergy, allergy passport

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**INTERNATIONAL MEDICAL CONGRESS OF SILESIA**

# **SESSION OF DOCTORAL SCIENCE MEDICINE**

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## **Serum IL-37, IL-18 and IL-18BP levels in active tuberculosis and latent *Mycobacterium tuberculosis* infection**

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Interleukin (IL)-18 and IL-37, members of the IL-1 cytokine family, are broadly involved in the regulation of anti-mycobacterial immune response. IL-18 activates and induce IFN- $\gamma$  production by Th1 cells, whereas IL-37 inhibits the inflammatory response by promoting a Th1-to-Th2 switch. Through its binding to IL-18 binding protein (IL-18BP), an inhibitory protein of IL-18, IL-37 may regulate the activity of IL-18.

The aim of the study was the evaluation of the levels of serum IL-37, IL-18 and IL-18BP in patients with active pulmonary tuberculosis (TB), individuals with latent M.tb infection and healthy non-infected volunteers.

The study group comprised of 269 adult Polish volunteers including patients with active TB, patients with nonmycobacterial lung diseases, and healthy volunteers. The latent M.tb infection in the volunteers was estimated on the basis of IFN- $\gamma$  production in the QuantiFERON TB Gold In Tube<sup>®</sup> (QFT) test. IL-37, IL-18 and IL-18BP levels were determined immunoenzymatically using DuoSet<sup>®</sup>ELISAs (R&D).

The levels of serum IL-37 in studied groups were comparable, whereas the IL-18 and IL-18BP concentrations were the highest in active TB patients sera. The strong IL-18 production in this group was accompanied by weak IL-37 secretion. Compared with the concentrations in TB patients, IL-18 levels in QFT(+) or OFT(-) individuals were low but IL-37 levels high.

The results indicate that the serum IL-37 levels are associated neither with active nor latent TB. Elevated IL-18 and IL-18BP concentrations might be considered indicators of active M.tb infection. Supported: 2016/21/B/NZ7/01771 and 2015/19/N/NZ6/01385

**Keywords: IL-37, IL-18, IL-18BP, Tuberculosis, *Mycobacterium tuberculosis***

## Sun and ketoprofen? Is a good connection?- case reports analyzis

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Phototoxic and photoallergic side effects are different expressions of an abnormal skin reaction from the exposure to light, usually enhanced by endo- or exogenous agents that are selectively activated by solar radiation.

The aim of this study was to test the photosensitizing effect of ketoprofen on the skin based on the analysis of patient cases.

The study material collected case reports of patients who had adverse reactions after using ketoprofen and exposure to UV radiation. Several of the cases collected were selected and carefully analyzed.

Tested patients who have the contact with UV radiation and taking ketoprofen in oral or local form suffered adverse reactions localized on the skin in the form: redness, blistering, burning and itching. The most commonly used diagnostic test was a patch test and photoflow tests with a series of photoallergens. Ketoprofen often causes cross-reactions with other drugs, provoking the creation of photoallergic reactions.

Ketoprofen is a photosensitizing substance that can cause skin changes in the form of redness, blistering, burning and itching.

**Keywords: ketoprofen, photosensitizing, phototoxic, photoallergic**

## **Polymorphism of gene of IL-8 cytokine in patients with pancreatogenic peritonitis**

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This study has assessed the possible association of IL-8 (-251A/T) polymorphism with clinical course and outcome of pancreatogenic peritonitis.

Data for the study were DNA samples, received from the leucocytes of 143 humans: 83 patients with pancreatogenic peritonitis, 60 healthy blood donors served as controls. IL-8 (-251A/T) polymorphism detection was made with polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP).

The analysis of frequency of IL-8 (-251A/T) polymorphism revealed that genotype A/T was the dominant variant (45%) among healthy blood donors. Distribution of IL-8 (-251A/T) polymorphism among patients with pancreatogenic peritonitis is characterized by dominance of genotype T/T in group after surgical treatment (p1). Among patients after surgical treatment genotype A/T was less often met in comparison with the group without surgical treatment (p was rarely registered, which may be due to regional peculiarities of the patient's genotype).

This study suggests that the identification of genetic polymorphism of IL-8 (-251A/T) may be informative and serve as an additional criterion to predict both the clinical course and outcome of pancreatogenic peritonitis; it may also specify indications for surgical treatment. However, the role of IL-8 (-251A/T) cytokine polymorphism in the outcome of pancreatogenic peritonitis requires further investigations.

**Keywords:** acute pancreatitis, pancreatogenic peritonitis, IL-8, gene polymorphism, cytokines

## The infectivity of PERVs retroviruses against human ADSC cells

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Xenotransplantation as a medical procedure involve the risk of transferring PERVs (porcine endogenous retroviruses) to the human cells. Better knowing and understanding of the PERVs infectivity mechanisms will increase the safety of using cells, tissues and organs obtained from pigs.

The aim of the study was to detect PERVs infection at the DNA and mRNA level in human adipose derived stem cells (ADSC).

ADSC were coculture with conditioned medium from porcine kidney epithelial cells (PK15), which containing PERVs. Cells were culture through for 12, 24, 48, 72 and 120 hours. After that cells were collected and DNA and RNA was extracted. PERV-specific DNA was detect by PCR technique and mRNA analysis was carried out using a real time RT-qPCR.

Analysis showed no evidence for transmission of PERV from PK15 to human stem cells at DNA level. However expression of mRNA connected with infection of retrovirus was different.

In vitro model is not a perfect system for assessment of infectivity that might occur in the recipient's body. A number of factors such as immunosuppression or individual differences have a significant impact on translating these results into in vivo conditions.

**Keywords: xenotransplantation, PERVs, retroviral infection, ADSC**

## Expression profile of gene related of ubiquitin and autophagy in colorectal cancer

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Two basic mechanisms of removing unnecessary proteins from the body have been described. The first mechanism is associated with lysosomes, while the second non-osmotic pathway is associated with ubiquitin. UPS is characterized by high selectivity since only ubiquitin-labelled proteins are removed. On the other hand, autophagy, a lysosome-dependent mechanism, is a process of self-digestion. Substrates destined for degradation are enclosed in an autophagosome. After its fusion with the lysosome, substrates are degraded.

The aim of this research is to evaluate changes in transcriptional activity of genes involved in autophagy and ubiquitination in colorectal adenocarcinoma.

The study material consisted of colloid carcinomas in four clinical stages, histopathologically confirmed as adenocarcinoma, and normal bowel segments. 1095 mRNAs involved in ubiquitination, present on the microarray of HG-U133A (Affymetrix, Santa Clara, CA ) were analyzed. The Statistical analysis was performed using the PL-Grid Infrastructure (<http://www.plgrid.pl/>).

From the group of 1095mRNA associated with ubiquitination, 180 mRNAs were expressed differentially when compared do K control group. In further analysis, overrepresentation test in the Panther Software, revealed that out of 180 mRNA, 14 were also associated with the autophagy.

Based on initial results from microarrays, it can be assumed that the autophagy of ubiquitin-labeled substrates may be inhibited by adenocarcinoma of the large intestine. In addition, ubiquitination can be disturbed already early in cancer transformation, which prevents the removal of damaged proteins and contributes to tumor progression.

**Keywords: autophagy, cancer, ubiquitin**



## **Expression profile of genes associated with the JAK-STAT signaling pathway in normal human dermal fibroblast (NHDF) cells treated with adalimumab**

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Adalimumab prevents the interaction of TNF- $\alpha$  and its receptors, which results in blocked signaling pathways. Interleukin 12 and 23 lead to an increase in TNF- $\alpha$  secretion by activation of the JAK-STAT signaling pathway, which stimulates the secretion of these interleukins.

The aim of this study was to evaluate the effect of adalimumab on the expression of genes associated with the JAK-STAT signaling pathway in NHDFs cultured in the presence of adalimumab compared to untreated cells.

NHDF cells were cultured with or without the presence of adalimumab (8 $\mu$ g/ml) for 2, 8, 24 hours. Total RNA extraction was performed using TRIzol reagent. The expression profile of genes associated with the JAK-STAT signaling pathway was evaluated with oligonucleotide microarray technique. RTqPCR was conducted to validate microarray results.

Among 37 mRNAs associated with the JAK-STAT signaling pathway, 18 mRNAs differentiate NHDFs cultured with adalimumab from the control. It can also be observed that 4 mRNAs differentiate cell cultures regardless of exposure time and they correspond to the following genes: JAK2, SOCS2, STAT1.

Adalimumab neutralizing TNF- $\alpha$  activity not only affects the signaling pathways activated by this cytokine, but is also involved in the modulation of expression of genes associated with JAK-STAT signaling pathways. activated by IL-12 and IL-23. In order to better understand the interaction between the drug and the changes taking place under its administration, further studies on the effect of adalimumab on the molecular mechanisms are necessary.

**Keywords:** adalimumab, JAK-STAT signaling pathway, microarrays

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**INTERNATIONAL MEDICAL CONGRESS OF SILESIA**

# **SESSION OF DOCTORAL GENERAL MEDICINE**

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## **Influence of contracture of hip flexor muscles on postural stability**

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Balance, understood as an independent ability to maintain body position, is a very important element of human functioning. We use this ability in every movement task. The proper functioning of the balance system depends on the work of the labyrinth, the organ of sight and the deep feeling, while the postural stability is additionally influenced by the symmetrical work of the muscles.

The aim of the study was to investigate the influence of contraction of hip flexor muscles on postural stability.

The study was conducted in the period January - March 2018 on a group of 30 people (7 men, 23 women). The study consisted of a author's questionnaire (23 questions including: occurrence of pain, physical activity, posture defects), a static equilibrium test on the SIGMA platform and Thomas test. The subjects were divided into 3 groups depending on the occurrence of contracture (Group I: people with negative Thomas test - 7, Group II: people with unilateral contracture - 9, Group III: persons with contracture of hip flexor muscles - 14).

The statistical analysis takes into account the average deviation length in the OX and OY (cm) and the surface area (cm<sup>2</sup>). The smallest area of the track covered in the 30s test was found in group I ( $\bar{x} = 0.41$  cm<sup>2</sup>), the largest in group III ( $\bar{x} = 0.45$  cm<sup>2</sup>). It was shown that the mean deviations in the OX and OY differ significantly between groups I and II. A similar result was not obtained between groups I and III.

People with unilateral contracture of hip flexor muscles have a significantly worse static balance than people without contracture.

**Keywords: balance, SIGMA platform, muscles contraction, Thomas' test**

## The doctors about vaccinations

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The level of vaccination rates is an important determinant of population health status. In recent years the number of people avoiding obligatory vaccinations is increasing, what is associated with a increase in morbidity of disease. The main source of information about vaccination is the doctor and he has the greatest impact on the parents' decision of vaccination.

Analysis of the attitudes of doctors qualifying children for vaccinations: how much time the doctor needs for a conversation with a parent about the vaccination program, doctor's relation to mandatory and recommended vaccinations, the manner in which doctors inform about vaccine injury.

Anonymous and voluntary survey was conducted among 102 pediatricians and paediatrics residents.

84% of doctors inform patients about the most common vaccine injury during every pre-vaccination meeting, 14% during almost every vaccination. The time needed for information about vaccination falls within the limits 2-5 minutes (48%), ¼ of respondents need 5-10 minutes for this. Unfortunately, 11% of respondents spend only 2 minutes for it. The vaccination, which according to the respondents should be mandatory, is meningococcal (84%), chickenpox (28%) and rotavirus (17%) vaccines. The majority of doctors indicated that no vaccination should be excluded from the vaccination program.

The time spent talking with the parents about vaccination is very short, it seems to be insufficient in the face of the aggressive expansion of anti-vaccine movements. The medical community agrees to extend the vaccination program to meningococcal vaccination and to keep all current vaccinations.

**Keywords: vaccination, anti-vaccine movements, doctors**

## Health behaviours and lifestyle of Poles

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Lifestyle and health behaviours influence human health condition. Health behaviours are formed by environment, education level and cultural norms.

Verification of health behaviours and lifestyle of Poles.

The study comprised 350 (100%) respondents, 242 (69.1%) women and 108 (30.9%) men. These were people arriving at admission room in one of the Silesian hospitals. The study was conducted via own survey questionnaire. The respondents' participation was voluntary and anonymous.

Definitely more women (159; 66%) compared to men (50; 46%) consumed fruit in a daily diet. Highly educated people (19; 25%) consumed fruit more frequently than people possessing primary education (6; 14%). 135 (56%) women slept 7-8 hours and comparably 61 (56%) men. The analysed city residents (88; 30%) were physically active more frequently, compared to country dwellers (8; 14%). Respondents with higher education (32; 42%) were considerably more physically active than respondents with primary education (6; 14%). City residents (64; 22%) smoked cigarettes more frequently than country dwellers (3; 5%). Respondents with vocational education (15; 20%) and with secondary education (21; 14%) stayed in smoky rooms definitely more frequently than highly educated people (4; 5%).

Health behaviours of analysed Poles within time for sleep, fruit consumption, physical activity and smoking are unsatisfactory. There is a need to conduct extensive health education promoting a healthy lifestyle, and as a result not causing diseases.

**Keywords: health behaviours, lifestyle**

## **Doctor or the Internet? Attitudes towards medical help and virtual self-help group among patients with Hashimoto's disease**

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Hashimoto's disease (HD) is an autoimmune thyroiditis, increasingly diagnosed among women and girls. In recent years, the popularity of online self-help groups (OSHG) for people with HD has been growing. It is an opportunity for patients to exchange experiences, advice, often content of OSHG is duplicating unreliable information about the treatment of the disease, stressing the lack of confidence in conventional medicine.

The aim of the study is to identify attitudes towards conventional medicine and virtual self-help of people diagnosed with HD using online support groups.

Questionnaire survey, including 210 subjects - women aged 18-60 using OSHG for people with HD.

Only 27.5% of patients are satisfied with the help received from an endocrinologist. Unsatisfied patients complain mainly about downplaying symptoms (56.9%), lack of information from a doctor (46.9%). As a result they avoid medical appointments and control tests (32.2% have hormones test, 55.9% thyroid USG). As a better source of help, indicate OSHG, describing main benefits: combating loneliness in illness (69.7%), good source of information on treatment methods (49.3%) or diet (45.5%), but also a place to exchange opinions about doctors (42.7%) and verification of medical recommendations (30.3%).

The results reveal distrust in medical help among patients with HD and a strong attachment to OSHG. The phenomenon may be considered alarming, according to the fact that in the content of online self-help groups, there are unreliable information, posing a health risk.

**Keywords:** Hashimoto disease, online self-help, self-help groups, e-health

## Risks of promoting healthy lifestyle in social media

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Nowadays the tendency of creating image in social media based on promoting healthy lifestyle by using fitspirations (pictures that present leading healthy lifestyle) is observed.

The aim of fitspirations is promoting healthy behaviours and motivating followers to imitating them. Current data suggest paradoxical effect of social media usage – depression, dissatisfaction on body image and eating disorder. Aim: To identify and characterize fitspirations influence on body satisfaction and health-related behaviors among social media's users.

235 women aged 18-30 using social media participated in experiment. For research group 10 images were presented, containing: healthy meals, gym accessories and parts of body. Images included descriptions motivating to healthy lifestyle. Controls watched 10 neutral images - not related to health, with neutral descriptions. Immediately after exposure, the actual state of body satisfaction was measured using the BISS questionnaire and also health attitudes by the SPZ-HF / BM questionnaire supplemented with the scales of motivation level for health-behaviors and satisfaction with health.

Even short-term exposure to fitspirations decreases body satisfaction ( $p=0.03$ ). Paradoxically, following fitspirating pictures doesn't significantly affect the health attitudes. The factor that strongly correlated with the body satisfaction in both groups was BMI ( $r=-0.41$ ).

Study revealed lack of a positive, pro-health effect of fitspirations' observation in social media. The tendency to increase body dissatisfaction during the observation of this type of photos can be interpreted as a risk factor - in the context of eating disorders.

**Keywords: Body image, eating disorders, social media, e-health**



## Opinions and attitudes to transplantation among group of high school students

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Nowadays we are the witnesses of the huge progress in the area of medicine. Transplantation is one of the greatest discoveries of the 20th century. Sometimes this is the only way to keep patients alive. There are many advantages of transplantation that people very often are not aware of. In order to identify opinions, knowledge and attitudes among young people the research about awareness of transplantation has been carried out.

Analysis of opinions and attitudes about transplantation among group of high school students including its affecting factors.

The research included 186 high school graduates in two schools in Katowice. Study was performed with diagnostic survey method. Participants fulfilled anonymous questionnaire.

Above half of respondents (53%) said they had never talked with relatives about the transplantation. Study participants declare their knowledge about transplantation is: very good- 10(5%), good- 44(24%), average- 91(49%), little- 30(16%), poor- 10(5%), no answer- 1 (1%). Only 8(4%) high school students had known somebody who was a donor. Respondents said that their religion is: pro- 76(41%), against- 8(4%), not sure- 54(29%) in transplantation process. Above 90% of students said the social campaigns about transplantation should be spread but only 6 respondents (3%) were participated in them.

The knowledge about transplantation process and programme is based on Internet and TV information. The main activity shall focus on constant education which will increase society awareness.

**Keywords: transplantation, graft, opinions**

## Cost comparison of open versus endoscopic extraperitoneal radical prostatectomy

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Prostate cancer is one of the most common types of cancer among males in Poland as well as globally. The increasing incidence results in higher costs of the healthcare system. Implementation of new technology in medicine often results in economic and health benefits for both medical service providers and patients.

To compare direct medical costs of open (ORP) versus endoscopic extraperitoneal radical prostatectomy (EERP).

The retrospective analysis included 80 patients who underwent radical prostatectomy (40 EERP, 40 ORP). In the study, we conducted preoperative evaluation of patients, including indicators such as: age, BMI, PSA level, Gleason and TNM scales. Direct medical costs were estimated based on: operating room time, length of hospital stay, disposable materials, blood transfusion and pharmacotherapy.

The results showed that total cost of EERP was significantly lower than the cost of ORP (mean €1218 vs. €2088.6;  $p < 0.0001$ ). By implementing the EERP technique, we achieved the economic value of €870.6 per patient compared to ORP. The length of hospital stay determined the total cost of radical prostatectomy. The average cost for the EERP group was €534.2 while for the ORP group €1135.8.

In our study, we showed the superiority of minimally invasive surgical technique over open technique in the case of radical prostatectomy. According to the cost-effectiveness analysis, full image of profitability of surgical techniques requires further studies and analysis of health outcomes at the later stage of research.

**Keywords: radical prostatectomy, costs, economic benefits**

## **Cost - minimization analysis of laparoscopic and robot-assisted radical cystectomy**

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Minimally invasive techniques have had an increasing implementation trend in recent years but they are associated with significantly higher costs.

To assess the cost-minimization of radical cystectomy performed using a laparoscopic (LRC) and robot-assisted (RARC) technique and to determine the postoperative complications and estimate the impact of complications on the formation of total costs.

A retrospective costs analysis was conducted between February 2016 and October 2017 in 65 patients who underwent radical cystectomy with ureterocutaneostomy or ileal urinary diversion. We compared patients' characteristics and variables which had an influence on the overall cost of surgery and selected direct medical costs: hospitalization, operating room, blood products, parenteral nutrition, diagnostic procedures and surgical instruments costs.

Perioperative data were similar in the compared groups. The complications rate of 2-5 was lower for RARC. LRC had a higher mean length of hospital stay but a shorter operating time than RARC by a mean of 89 minutes. The shorter operating time had an impact on the operating room costs (LRC: €759; RARC: €1088,  $p < 0.001$ ). The main difference was in the surgical instruments' cost (LRC: €137; RARC: €1132 per case). The total cost of RARC was significantly higher than LRC surgery (LRC: €3,368; RARC: €4298;  $p < 0.001$ ).

RARC had the higher total cost but shorter length of hospital stay, a lower number of blood transfusions and complications rates than LRC. The cost analysis presented in this paper showed the superiority of LRC over RARC.

**Keywords: Bladder cancer, Cost analysis, Financing, Laparoscopic, Robot-assisted, Radical cystectomy**

## **Sexuality of people with intellectual disabilities in the aspect of not only in medical student's opinions**

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Sexuality expressions of people with intellectual disabilities is a simplification, because there is in fact such a phenomenon. There is only human sexuality, which in relation to people with limitations in the state of health and fitness can take on specific manifestations, which is determined by individual and environmental determinants to the greatest extent.

Determination of the students selected directions beliefs about sexuality of people with intellectual disabilities.

The study involved 250 students from the faculties: nursing (62 people), emergency medical services (70 persons), tourism and recreation (32 persons), cosmetology (26 people) and physiotherapy (60 people), mostly women. Likert scale was used "Sexuality of people with intellectual disabilities in the opinion of the students and the questionnaire (own development). The research was carried out between November and December 2017 among students of the Podhale State College of Applied Sciences in Nowy Targ.

The variable field of study has a significant significance for the subjects. Nursing students reveal relatively strongest conviction in all categories, in turn, considered the weakest belief in all categories reveal the students of tourism and recreation.

The study revealed that students beliefs about sexuality of people with intellectual disabilities have the character takes into account the complexity of its conditions.

**Keywords: intellectual disability, sexuality, sexual needs, education**

## **Social problems of patients and problems with infectious disease-related laws in the pulmonology ward**

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Social problems of patients and disease-related laws related to the infectious diseases are one of the most important and difficult issues connected with work in the pulmonology ward. There is a strong connection between the frequency of infectious diseases occurrence and social status of patients. The aim of our study is to analyze the types of patient social problems and their consequences in medical treatment process.

We carried out a retrospective study. We analyzed cases of patients hospitalized in the Pulmonological Ward in The John Paul II Hospital in Krakow from 2013. The cases included 145 women and 173 men. Statistical analyses were performed with the Statistica software.

Majority of cases were treated successful and without any problems, most patients agreed to the planned treatment. However there was a group of patients that did not agree to the treatment, caused problems to the Lower Staff and had complicated life situation and social problems. The number of these cases was statistically significantly higher compared to the control group.

Based on our material we have found that in group of patients with infectious diseases there are more social problems and the treatment is more difficult due to patient lack of cooperation.

**Keywords: infectious diseases, medical law, pulmonology**

## Medical and legal aspects of vaccination in children

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Vaccines have helped to reduce mortality from infectious diseases and eliminated eg smallpox. Every year in Poland updated Vaccination Programme is being published. Vaccinations are divided into obligatory (financed from budget of the Ministry of Health) and recommended.

Programme aims to facilitate the implementation of vaccinations and to provide a better safety profile for vaccination (by using eg acellular vaccines).

Doctor decides on the administration of every vaccine, what minimizes the risk of an vaccine adverse reaction. Like any substance entering the body, vaccines can cause side effects like fever, rash or very rare strong allergic reaction to the components of the vaccine. Adverse reactions became the basis for discussion about vaccination safety, what is a problem in the medical and legal context. Group of parents who evade to vaccinate children increases every year. This raises questions about parental authority. Parents who refuse the child's right to vaccination, following their own beliefs, not supported by medical knowledge, are misunderstanding the concept of parental authority and expand its legal boundaries. According to jurisprudence, parental authority is determined by the child well-being and social interest. P

arents represent a child, who does not have full rights to provide legal activities, eg to agree to undergo a medical procedure. Nor has a child appropriate knowledge and assessment possibilities, to decide what its legal and factual interest is. Therefore, representatives should provide care, based on scientific evidence, the physical development of the child and ensure its appropriate material status and healthcare.

**Keywords: Vaccination, parental authority, adverse reaction to vaccines**

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INTERNATIONAL MEDICAL CONGRESS OF SILESIA

# **SESSION OF ANAESTHESIOLOGY, INTENSIVE CARE AND EMERGENCY MEDICINE**

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## **Single-centre experience regarding fluid therapy and its monitoring in gastrointestinal (GI) surgery**

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Fluid quality and quantity should be adjusted to the patient and procedure-related conditions. Rational perioperative therapy with fluids, inotropes and vasoactive drugs should always be guided with adequate hemodynamic monitoring.

To evaluate single-centre practice on perioperative fluid therapy in GI surgery.

This cross-sectional study covered 235 patients (103M), aged  $60\pm 15$  y who underwent GI surgery from Sep to Nov 2017. Patient-related and procedure-related risk was assessed according to the guidelines. Fluid therapy was analyzed in terms of their quality and quantity. Methods of hemodynamic monitoring were assessed.

There were 124 high risk patients and 89 high risk procedures were performed. The overall high procedural risk concerned 164 patients. 11 patients died. Median values of the administered fluids were [ml/kg/h]: 10.39 fluids in total, 9.13 crystalloids in total (incl. 8.49 balanced crystalloids/ 0.93 0.9% saline) and 2.67 synthetic colloids. The dose of fluids was higher in high risk patients ( $p=0.01$  for fluids in total) but lower in high risk operations ( $p=0.01$  for crystalloids in total, saline and balanced solutions). Those who died received more fluids than survivors ( $p=0.001$  for fluids in total,  $p=0.02$  for colloids,  $p=0.05$  for synthetic colloids). In all subjects non-invasive blood pressure monitoring was used and only 6 patients had the therapy guided based on metabolic equilibrium.

Although our fluid therapy is rather liberal, it complies with international recommendations regarding the type of fluid and the risk-adjusted dosing. Hemodynamic monitoring remains suboptimal.

**Keywords: goal-directed fluid therapy, monitoring, electrolytes**

## **Assessment of variability of the physiological parameters during anaesthesia**

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Monitoring the vital signs is a crucial element of patient care during the intraoperative period. This supervision enables early detection of threats, recognizing side effects of anaesthesia and conducting anaesthesia in a safe way for the patient.

Assessment of variability of the physiological parameters monitored intraoperatively and their potential determinants.

A retrospective study included 838 patients (233 men, median age 48 years, IQR 34-62), who underwent neurosurgical, gynaecological or gastrointestinal surgery. Assessment covered heart rate (HR), systolic blood pressure (SBP), diastolic blood pressure (DBP), peripheral oxygen saturation (SpO<sub>2</sub>) and end tidal carbon dioxide (EtCO<sub>2</sub>), recorded every 5 minutes during anaesthesia. Data were collected from anaesthetic record cards. We calculated the coefficient of variation (CV) for evaluated parameters.

The in-hospital mortality was 2.15% (18 patients). Dependence between HR and: age, ASA, type and time of anaesthesia, and body position were statistically significant. Moreover, significant relationship was found between blood pressure and age, type and time of anaesthesia, ASA, the outcome (survival/death), body position and BMI. Due to the lack of significant fluctuations for SpO<sub>2</sub> and EtCO<sub>2</sub> variability in sub groups has not been studied.

The variability of hemodynamic parameters during anaesthesia is high. Although the risk of fluctuations in hemodynamic parameters is the lowest in patients undergoing total intravenous anaesthesia, this effect is primarily due to preoperative risk. Variability of blood pressure during anaesthesia may be a prognostic factor in death.

**Keywords:** physiological parameters, intraoperative monitoring

## **Acinetobacter baumannii (AB) in the intensive care unit (ICU) patients**

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AB is a Gram(-) bacterium which is an opportunistic pathogen in humans. Patients infected with AB have an increased risk of mortality, especially in the ICU setting.

To investigate the epidemiology of AB infections in the ICU.

Retrospective analysis covering 68 patients (40M/28F, median age 63y) hospitalized in ICU from Nov 2015 to Nov 2017 was performed. Descriptive demographic and clinical data were retrieved from medical records.

AB infections were more frequent in summer and autumn (Oct 2016: n=6, July 2017: n=10, Oct 2017: n=10). Median time of hospitalization of patients with AB was 26 days (IQR 12-46). Median time from admission to the ICU to AB identification was 11 days (IQR 3-21). 54 (79%) patients were treated with antibiotics prior to pathogen isolation. 48 (71%) strains of AB were retrieved from bronchoalveolar lavage specimens and 60 (88%) strains were multidrug resistant. Patients were treated with: colistin only (n=26, 44%), colistin+gentamicin (n=18, 31%), gentamicin only (n=6, 10%) and other antibiotics (n=9, 15%), according to microbiological findings. Median time of antibiotic therapy was 10 days (IQR 6-14). 31 (46%) patients with AB infection (21M/10F) died. Other emergency pathogens (OEP) were co-identified in 37 (54%) patients and 21 (57% with OEP) of them died. Patients with AB+OEP had statistically higher mortality ( $p=0.04$ ). AB infection-related mortality were higher in males ( $p=0.17$ ).

AB infections constitute a frequent and clinically important health hazard in the ICU patients.

**Keywords: Acinetobacter baumannii, Intensive Care Unit**

## **Risk Factors for Morbidity and Mortality after Lung Resection for Lung Cancer**

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It is accepted that postoperative development of complications directly contributes to the increase perioperative mortality. What's more, evidence indicates that postoperative complications after lung resection are common. Therefore, the interest in the prognosis of complications and mortality associated with lobectomy is very important.

The aim was to develop a predictive model that defines how pre-operative risk factors lead to grow mortality after elective lobectomy.

Retrospective analysis of patients undergoing planned lobectomy for cancer, from January 2016 to December 2017. 37 preoperative and intraoperative risk factors were included for their effect on perioperative mortality within 30 days of surgery. Statistica 12 was used for statistical analysis, significant results were accepted at  $p < 0.05$

There were 387 lobectomies identified. In 55% of cases open lobectomy was performed. Complications occurred after 25% of operations. Multiple risk factors and complications were found to be predictors for mortality, among others, type of surgery, electrolyte disturbances, dyspnoea, anemia. Most of the patients had more than one risk factor.

Study shows that the relationship between risk factors, complications and postoperative mortality is complex and additional examination in mechanisms for calculating mortality risk in the perioperative period is justified.

**Keywords: risk factors for mortality, lung cancer, lung resection**

## Sleep quality of Polish Anesthesiologists – the first nationwide survey

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Reduced sleep quality (SQ) and a variety of sleep disturbances are frequent in anesthesiologists due to work overload, emotional strain, shift work and unfavorable work environment.

To assess the quantity and quality of sleep, and their association with work-related factors in a representative sample of Polish Anesthesiologists.

This project was performed in December 2017 and 1500 anesthetists were invited by e-mail correspondence twice to participate in this cross-sectional study, and 786 of them, including 615 specialists/ 171 residents, aged 26-78y (median 42y), with work experience of 1- 58y (median 15y) agreed. Epworth Sleepiness Scale (ESS) and Skala Jakości Snu (SJS) served as survey tools.

Median ESS score was 17 and SJS score was 31. Correlation between ESS and SJS was positive ( $R=0.39$ ). Median number of working hours during last month was 250 (IQR 200-300). Median number of 24h-shifts was 7 (IQR 5-8). Median number of days off was 7 (IQR 5-10). 562 (71.5%) respondents were not satisfied with their sleep quantity and 387 (49.2%) were not satisfied with SQ. 729 (92.7%) declared that sleep disturbances affected their work quality. There was correlation between ESS and quantity of work (working hrs:  $R=0,12$ /shifts:  $R=0,06$ / days-off:  $R=-0,10$ ). There was also correlation between SJS and work overload (working hrs:  $R=0,15$ /shifts:  $R=0,13$ /days-off:  $R= -0,14$ ).

SQ of Polish Anesthetists is unsatisfactory, which may be related to work overload and reduced quantity of spare time used for regeneration.

**Keywords: sleep quality, anesthesiologists**

## Neurological complications after cardiac surgery

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Neurological complications after cardiac surgery may manifest in different ways. These include the delirium and transient ischemic attack that usually have no long-term effects on the patient's quality of life. Other types are focal or generalized damage to the CNS caused by stroke that may result in disability, vegetative state or death.

The aim of the study was to investigate the occurrence of neurological complications with special regard to strokes in adult patients undergoing CABG and AVR in 2017 in Silesian Center for Heart Diseases in Zabrze. Also preliminary approach to assess risk factors was done.

Retrospective analysis of query medical records was performed. The department database was verified with the source data. The study group consisted of 503 CABG and 105 AVR patients. Statistical analysis was performed with use of  $\chi^2$  test and Mann-Whitney U test.

Among patients who underwent CABG, 6.93% of patients had neurological complications in general (n=37). 3.38% of patients showed clinical evidence of stroke (n=17). 2.58% of patients suffered from delirium (n=13). In AVR group 5.71% of patients neurological complications occurred in total (n=6). That was 1.90% patients with stroke (n=2) and 1.90% with delirium (n=2).

Despite the observed relatively low incidence of stroke, it can be life threatening or severely influence the patient future. In analyzed material the incidence of stroke was lower in AVR group in comparison to CABG group however this difference was not significant.

**Keywords: CABG, AVR, stroke**

## Patients' attitudes towards perioperative pain – expectations versus reality

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Pain accompanies almost all surgical procedures. Therefore, its control should be considered as an inherent factor of perioperative treatment. Inadequate treatment may lead to numerous complications, including development of chronic pain and delayed rehabilitation.

To assess patients' attitudes regarding pain intensity and controlling the perioperative period.

The study included 30 patients (18 males), aged  $58 \pm 14$  y who underwent gastrointestinal surgery between 08.01.2018 and 09.03.2018. The subjects filled in a questionnaire investigating their current preoperative, as well as expected acceptable and real postoperative pain. Factors aggravating and alleviating pain were evaluated. NRS was used for pain intensity assessment.

Preoperatively, 15 patients (50%) suffered pain lasting about 3 months (IQR 2-8), with a NRS of  $7.4 \pm 2.2$ . Food intake aggravated pain in 6 persons and physical activity in 7. Pain decreased sleep quality in 8 subject (53%) and 13 persons (87%) took analgesics. Postoperative pain intensity was expected to be  $5.4 \pm 2.3$  and the real value was  $5.5 \pm 2.3$  ( $p=0.7$ ). About half of the patients tended to accept side effects of analgesics to achieve optimal pain control (13 nausea, 16 delayed food intake, 14 sleepiness). A number of 23 (77%) patients were satisfied with postoperative pain control but 18 persons (60%) complained about sleep quality deterioration. Those who suffered pain preoperatively assessed pain intensity postoperatively on  $6.3 \pm 1.6$  ( $p=0.1$ ).

Peri-procedural pain control in gastrointestinal surgery is satisfactory and patients expectations are convergent with local analgesic politics.

**Keywords:** pain control, patients' attitudes, perioperative period

## **Time between the occurrence of traumatic brain injury and operation time, and the prognosis in a 6-month follow-up**

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Traumatic brain injuries (TBI) are the acknowledged causes of severe disability and death.

To assess the impact of time from injury to operation on the survival and functional status of patients in the 6-month follow-up.

The study was conducted in 37 patients (32M, mean age  $53\pm 18$ ) with TBI (closed type in 95%) hospitalised in the academic center in 2016-2017. Clinical and demographic data were collected. The time from injury to hospital admission and onset of the operation was calculated. Hospital death and neurological status by the GOS scale in the 6-month follow-up were the outcomes.

In the study group, 13 patients died before the operation, 5 subjects were not qualified for surgery and 17 patients underwent emergency procedures. The median ASA was 4 points (IQR 4-5). The median time between injury and hospital admission was 230 min (IQR 128-571) and between trauma and surgery it was 270 min (IQR 199-661). The overall hospital mortality was 61.1%. The time from trauma to admission ( $p = 0.10$ ) and operation ( $p = 0.89$ ) was comparable between people who died and survived. In the follow-up, GOS scale patients were evaluated as follows: (1) – 0, (2) – 1, (3) – 3, (4) – 2 and (5) – 1 person. The time from trauma to admission ( $p = 0.17$ ) and operation ( $p=0.37$ ) was comparable between survivors in consecutive GOS categories.

The time from trauma to hospital admission and neurosurgical procedure cannot be considered as a predictor of neurologic outcome in the follow-up.

**Keywords: traumatic brain injury, prognosis, time, operation**



## **Diagnostic accuracy of the red blood cell distribution width (RDW) in predicting in-hospital mortality in patients undergoing high risk gastrointestinal surgery**

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The red blood cell distribution width index (RDW) is one of several parameters routinely analyzed in peripheral blood counts.

The aim of the study was to assess the usefulness of RDW in prediction of in-hospital mortality in patients undergoing gastroenterological high risk surgery.

Prospective observation covered 229 patients who underwent surgery between 01.2017 and 12.2017, for whom the risk of cardiovascular complications was high due to the type of procedure. The patient's individual risk was assessed using the criteria of the American Society of Anesthesiologists (ASA-PS). Peripheral blood was collected pre-operatively. The following parameters of the red blood cell system were evaluated: RBC, Hgb, Hct, MCV, RDW-SD, RDW-CV. The occurrence of hospital death was the main endpoint.

Patients who died had statistically significantly lower RBC, Hgb and Hct values, as well as higher RDW-SD and RDW-CV values. Both the preoperative RDW-SD and RDW-CV values predicted the outcome, respectively: AUC[RDW-SD]=0.744 (95%CI 0.683-0.799;  $p<0.001$ ), AUC[RDW-CV]=0.762 (95%CI 0.702-0.816;  $p<0.001$ ). In logistic regression it was confirmed that RDW predicted mortality (OR[RDW-SD]=1.21;  $p<0.001$ , OR[RDW-CV]=1.62;  $p=0.01$ ), even after adjustment for individual risk and other erythrocyte parameters.

RDW is a valuable screening predictor of in-hospital mortality in patients undergoing high-risk gastroenterological surgery, regardless of the estimated individual risk and the value of other erythrocyte parameters. Evaluation of the RDW may be helpful in the identification of patients requiring correction of hematological disorders in the pre-operative period, as well as in particular surveillance in the perioperative period.

**Keywords: Peripheral blood morphology, anemia, risk, perioperative medicine**

## Attitudes of non-anesthetists towards cardiopulmonary resuscitation

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Cardiopulmonary resuscitation (CPR) is a life-saving procedure performed by doctors regardless of their specialization. Both knowledge and practical skills are needed to increase the chance of survival of the victims suffering from sudden cardiac arrest.

To assess the attitudes of non-anesthetists towards CPR.

A 26-item questionnaire survey was conducted between 01-03.2018 among 151 medical professionals, including 39 doctors of surgical specialization, 62 of non-surgical specialization, 9 of pediatric surgical specialization, 6 of pediatric non-surgical specialty, and 34 interns and medical students. General approach towards CPR was determined as well as the differences in attitudes between specialties.

Over 80% of the interns and students responded that CPR is not taught properly. All groups assessed their skills as average (median of 4 on a 6-point scale). There was no correlation between subjectively and objectively estimated level of knowledge on CPR ( $R=0.07$ ). A number of performed CPR correlated with subjectively ( $R=0.55$ ) but not objectively ( $R=0.18$ ) assessed level of knowledge. 32% of the surveyed would start CPR in patients who had given their conscious consent of DNAR. 39% of the doctors would not stop CPR in terminally ill patients. Only 32% would discontinue CPR of terminally ill children. Half of the respondents would declare death only when it was confirmed by the anesthetists. There were no significant differences between the analyzed subgroups.

Non-anesthetists failed to prove their suitable approaches towards CPR. Teaching policy could be blamed for those shortcomings.

**Keywords:** CPR, cardiopulmonary resuscitation, non-anesthetist

## Effects of pulmonary resection on vectorcardiographic parameters

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Vectorcardiography is a method of recording changes in the position of the electric heart vector over time. This method registers, in 3 perpendicular dimensions, changes occurring during cardiac cycle. This gives the opportunity to assess the change in the heart position, which can significantly affect hemodynamic parameters. These changes may be particularly prominent in patients after pulmonary resection.

The aim of the study is to determine the usefulness of vectorcardiography as a method of cardiological assessment of patients after pulmonary lobectomy procedures.

Patients undergoing elective pulmonary resection were qualified for the study. This was prospective observational study. The measurements were taken with Cardiax device in four consecutive time points (on the day before the surgery, on the first, second and third day after the procedure) Results were collected and statistically analyzed using the Statistica 12 program;  $p < 0.05$  was considered significant.

Initial analysis showed effects of major pulmonary resection on cardiax parameters.

Significant usefulness of vectorcardiography in assessing the change of heart position after pulmonary resection was demonstrated.

**Keywords: vectorcardiography, pulmonary lobectomy, hemodynamic parameters, heart position**

## **Reliability of end-tidal carbon dioxide monitoring in critically-ill patients with cerebral edema**

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Monitoring arterial partial pressure of carbon dioxide (PaCO<sub>2</sub>) is crucial in patients with cerebral edema as variations in PaCO<sub>2</sub> alter cerebral blood flow. End-tidal CO<sub>2</sub> (PETCO<sub>2</sub>) monitoring is a non-invasive method of estimating PaCO<sub>2</sub> in patients without lung disease, which can reduce the need for arterial blood gas (ABG) sampling.

To evaluate the relationship between PaCO<sub>2</sub> and PETCO<sub>2</sub> in Intensive Care Unit (ICU) patients with type 1,2 or 3 of cerebral edema.

The observation included 7 patients (4F; 22-71y) with neurosurgical conditions leading to cerebral edema, hospitalized in 2017. None of the patients had a pre-existing acute or chronic lung disease. 50 ABG results and corresponding PETCO<sub>2</sub> and SpO<sub>2</sub> values were retrospectively retrieved from medical records.

All patients required: norepinephrine to maintain mean arterial pressure of 80-100 mmHg, osmotic therapy with body mass-adjusted doses of 15% mannitol, and pressure-controlled mechanical ventilation with fraction of inspired oxygen (FiO<sub>2</sub>) varying from 0.25 to 1.0. One patient developed neurogenic ARDS due to subarachnoid hemorrhage. There was a weak correlation between PETCO<sub>2</sub> and PaCO<sub>2</sub> (R=0.274; p=0.05), with a significant inter-subject variations (from 0.307 to 0.763). Higher differences were observed in patients who required frequent FiO<sub>2</sub> changes. There was a moderate correlation between PaO<sub>2</sub> and SpO<sub>2</sub> (R=0.486; p<0.01), regardless of FiO<sub>2</sub> values.

PETCO<sub>2</sub> cannot be used interchangeably with PaCO<sub>2</sub>, especially in patients developing respiratory problems. Further research is needed to determine PETCO<sub>2</sub> utility in ICU patients with cerebral edema of different origin.

**Keywords: end-tidal carbon dioxide, arterial partial pressure of carbon dioxide, cerebral edema, intensive care unit**

## **Impact of malnutrition on surgical and infectious complications in patients after abdominal surgery**

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Malnutrition is a known risk factor for postoperative complications in surgical patients. It is crucial to identify susceptible individuals to take suitable preventive measures before the procedure.

To investigate whether the malnutrition influences surgical and infectious complications of patients hospitalized in the Intensive Care Unit following major abdominal surgeries.

Retrospective study covered 51 patients (25 females, 26 males) with median age 64,71 years (SD=10,544) hospitalized between January and December, 2017. Nutritional Risk Score was calculated. Nutritional status was assessed pre-operatively as well as after arrival at the ICU using serum albumin (SA) total protein (TP) concentrations and total lymphocyte count (TLC). Post-operative infections, including surgical site infection (SSI), a need for reoperation, in-hospital mortality and length of ICU stay were the outcomes.

Median NRS was 4 meanwhile IQR was 1,87. SA enabled prediction of mortality (AUC=0.833;  $p<0.01$ ), SSI (AUC=0,764;  $p<0.01$ ) and urinary tract infection (AUC=0.722;  $p<0.01$ ). TP helped predict SSI (AUC=0.714;  $p<0.01$ ), reoperation (AUC=0.618;  $p<0.01$ ) and mortality (AUC=0.667;  $p=0.01$ ). TLC predicted none of the outcome measures.

Pre-op SA and TP are valuable biomarkers of prognostication in abdominal surgery, in patients with relatively low NRS.

**Keywords: malnutrition; albumin; complications; abdominal surgery**

## **Can the leukocytes' parameters in peripheral blood smear predict in-hospital death of patients undergoing high-risk gastrointestinal surgery?**

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White blood cell (WBC) count constitutes a part of routine peripheral blood examination. Precise analysis of leukocytes' parameters in blood smear is usually performed only when abnormalities in WBC count are found.

We aimed to verify whether leukocytes' smear test is useful in predicting in-hospital death of patients undergoing high-risk gastrointestinal (GI) surgery.

We prospectively enrolled 101 subjects undergoing high-risk GI surgery in 2017. Blood tests were performed preoperatively, with analysis focused on the assessment of total WBC count, as well as the count of neutrophils (NEUT), lymphocytes (LYM), monocytes (MONO), eosinophils (EOS) and basophils (BASO). Indices of NEUT/LYM (NLR) and MONO/LYM (MLR) were calculated. In-hospital mortality was considered the outcome.

Mortality reached 5%. There was no significant difference in WBC count between survivors and the deceased ( $p=0.2$ ). WBC failed to predict the outcome ( $AUC=0.69$ ;  $p=0.3$ ). MONO ( $p=0.009$ ) and BASO ( $p=0.02$ ) counts, as well as MLR ( $p=0.007$ ) were significantly higher in patients who died. Also, MONO count and MLR index predicted in-hospital death with good accuracy, respectively:  $AUC[MONO]=0.85$ ;  $p=0.001$ ; cut-off:  $>0.95$ , and  $AUC[MLR]=0.86$ ;  $p=0.37$ . Other investigated parameters played no role in outcome prediction.

Routine peripheral blood smear evaluation should be considered in all patients undergoing high-risk GI surgery, because monocytosis can be a valuable predictor of in-hospital death.

**Keywords:** Peripheral blood morphology, monocytosis, risk, perioperative medicine

## Only wine gets better with age: comparison of arterial blood-gas (ABG) results obtained from point-of-care (POC) and central laboratory (CL) testing

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Results of an ABG test are of key importance in intensive care medicine as they may influence further diagnostics and therapy.

To assess differences ( $\Delta$ ) between ABG findings obtained from POC vs CL measurements, and possible impact of transport time and samples storage on the differences that occurred.

A number of 104 paired samples were collected from 54 intensive care unit patients via arterial line. ABG analyses were performed using Siemens RAPIDPoint 500 blood-gas system, applied as a POC test in the ICU location and as a standard measurement in the CL.

Median time delay in ABG analysis was 56 minutes (IQR 39-74). Median  $\Delta$ s for water and electrolytes balance were:  $\Delta mOsm = 2.8$  mM/kg (from -19.5 to 20),  $\Delta Na = 1.55$  mM/L (from -12.9 to 10.3),  $\Delta K = -0.12$  mM/L (from -1.29 to 1.58) and  $\Delta Cl = 1$  mM/L (from -13 to 10). For acid-base balance  $\Delta$ s were:  $\Delta pH = 0.006$  (from -0.04 to 0.09),  $\Delta BE_{ef} = -1$  (from -9.2 to 6.8) and  $HCO_3^{-} = -1$  (from -9 to 6.4). Median  $\Delta$ s for ventilatory parameters were:  $\Delta pCO_2 = -2.2$  mmHg (from -14.3 to 7.6) and  $\Delta pO_2 = -8.3$  mmHg (from 76.8 to 112.7). Some  $\Delta$ s were observed for Hct = -1% (from 14 to 17), Hb = -0.3 g/L (from -4.9 to 5.8), Glu = -4 g% (from -61 to 50) and Lac = -0.46 mM/L (-3.46 to 0.41). We found correlation between time delay and  $\Delta pH$  ( $R=0.451$ ,  $p<0.01$ ),  $\Delta pCO_2$  ( $R=-0.22$ ,  $p=0.02$ ) and  $\Delta Lac$  ( $R=-0.465$ ,  $p<0.01$ ).

ABG  $\Delta$  in measurements between POC and CL testing are significant and may markedly interfere further treatment decisions. Additional investigations are needed to examine which variables influence the observed results (e.g. storage temperature or probe position).

**Keywords:** intensive care; arterial blood-gas; POC

## Usefulness of the selected laboratory indices in mortality prediction in sepsis

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There are several clinical and laboratory indices used in sepsis prognostication, including findings from whole blood cell analysis, inflammatory markers and metabolic measures.

To investigate the usefulness of white blood cells count (WBC), WBC:PLT ratio, NEUP:PLT ratio, C-reactive protein concentration and lactate level in ICU patients with sepsis.

Retrospective analysis covering 58 patients (30F/28M; 56±20y) hospitalized in 2016 was performed. Potential investigated indices were assessed a day prior sepsis occurrence (WBC, WBC:PLT, NEUP:PLT, CRP) (day 0), and on a day of sepsis confirmation (WBC, WBC:PLT, NEUP:PLT, CRP, lactate level) (day 1). In-hospital mortality was considered the outcome.

Mortality was 54%. WBC<sub>0</sub>, WBC<sub>1</sub>, WBC:PLT<sub>1</sub>, NEUP:PLT<sub>1</sub>, CRP<sub>0</sub> were comparable between deceased and survivors ( $p>0.05$ ). WBC:PLT<sub>0</sub> ( $p=0.05$ ), NEUP:PLT<sub>0</sub> ( $p=0.04$ ), CRP<sub>1</sub> ( $p=0.01$ ), mean lactate level ( $p=0.01$ ), and maximal lactate level ( $p=0.008$ ) were statistically significantly higher in deceased subjects. Amongst those significant predictors of mortality, the highest diagnostic accuracy was found for maximal lactate level (AUC=0.703, 95% CI 0.568-0.815,  $p<0.01$ ), and the lowest for WBC:PLT<sub>0</sub> (AUC=0.661, 95%CI 0.513-0.789,  $p=0.04$ ).

Lactate level is a better predictor of prognosis in patients with sepsis compared to inflammatory markers.

**Keywords: sepsis, lactate level, mortality prediction**



## **Assessment of high school students about providing first aid**

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Knowledge how to provide first aid increases the chances of surviving the injured person. Each of us should be properly skilled and trained to be able to help save human life.

The purpose of presented study was to evaluate the knowledge about first-aid (FA) and basic life support (BLS) among high-school students.

90 female and male high school students in Lublin were surveyed.

The majority of participants were females (65%). About 90% of respondents took part in the first-aid classes organized by school and conducted by civil defense training (PO) teachers. Most of students have been trained only theoretically. More than 79% of respondents have never been in a situation which would require the provision of first aid. 70% of respondents evaluated their level of knowledge as good or very good. Good knowledge about first aid was observed in 20% (18), moderate knowledge in 46.67 % (42) and poor knowledge in 33.33% (30) participants.

Constant education and practical training could be good way to improve first-aid skills among students.

**Keywords: first aid, students, emergency**

## The influence of osmotic therapy on the variance of plasma osmolality parameters

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The osmotic therapy is a standard procedure in patients at risk of or with developing cerebral oedema. It may lead to the uncontrolled fluctuations of the parameters reflecting acid-base balance and water-electrolyte homeostasis.

We aimed: (1) To evaluate the variability of the selected arterial-blood gas parameters in patients receiving mannitol therapy. (2) To assess the association between the observed variability and the outcome.

This retrospective study covered 27 critically ill patients hospitalized in the ICU from 01.2017 to 11.2017 at risk or with developing brain oedema. We calculated the coefficients of variation (CV) for serum osmolality, sodium, chlorides and lactate concentrations, strong ion difference (SID) and daily fluid balance. We compared the CVs, time and a daily dose of mannitol in subgroups divided by gender (M/F), age category (<52/≥52 y), and the outcome (survival/death).

The study group consisted of 27 patients (14 men/median age 52y, IQR 35-65). The in-hospital mortality was 78% (21 patients). The median time of mannitol administration was 5 days (IQR 3-14) and its median dose was 30g/day (IQR 23-42). All CVs did not differ between groups by either gender or age. Values of NaCV (AUC=0.913, 95%CI 0.739-0.986), ClCV (AUC=0.833, 95%CI 0.641-0.948), and OsmCV (AUC=0.817, 95%CI 0.622-0.939) allowed to predict the in-hospital mortality. In logistic regression, we verified that that effect remained significant only for NaCV (logOR=9.2; p=0.05) and ClCV (logOR=5.1; p=0.05), but even after adjustment for mean values of Na and Cl concentrations.

High variability of sodium concentration is the strongest predictor of the compromised outcome in patients on mannitol therapy.

**Keywords:** cerebral odema, plasma osmolality, osmotic therapy

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INTERNATIONAL MEDICAL CONGRESS OF SILESIA

# **SESSION OF BASIC SCIENCE AND EXPERIMENTAL MEDICINE**

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## Comparison of sporulation between clinical and hospital environment strains of *Clostridium difficile* and *Clostridium perfringens*

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Hospital environment containing many hospital pathogens including: *C. perfringens* and *C. difficile* which can cause severe forms of infection in vulnerable patients. Spreading of these bacteria is facilitated due to sporulation. Spores are more resistant to unfavourable conditions i.e. oxygen, high temperature or chemicals like alcohol-based disinfectants which can even potentiate sporulation.

The aim was to compare sporulation of *C. difficile* and *C. perfringens* strains isolated from clinical sample obtained from patients and hospital environment.

Environmental strains were taken from one hospital located in Silesian region and cultured using *C. diff* Banana Broth™. Clinical strains were obtained from fecal samples of patient with antibiotic associated diarrhea (AAD), hospitalized in the same hospital. All strains were cultured on Columbia agar, and in the BHI broth, with 1% horse serum and in the Ellner medium. After growth of colonies alcohol shock (96% ethanol, 1:1) was performed for 30, 60 and 90 min. At the end, presence of alive bacteria and spores was controlled by Gram and Schaeffer–Fulton staining. To check the ability of germination 96 hours after alcohol shock bacteria growth in BHI and Ellner medium were cultured on Columbia agar.

Strains of *C. perfringens* and *C. difficile* isolated from fecal samples patients with AAD demonstrated better sporulation than environmental strains. Dependence between time of alcohol shock exposure and sporulation was observed. All strains from Ellner medium except one germinated very well. Growth of *C. perfringens* strains was abundant than *C. difficile* strains.

Ellner medium provided better conditions for germination independently of source of strains. Germination of *C. perfringens* was more intensive than *C. difficile* especially among strains isolated from fecal samples of patients.

**Keywords: microbiology, clostridium perfringens, sporulation**

## **Determination of the expression profile of selected microRNAs in pleural effusion accompanying non-small cell lung cancer, as promising biomarkers of contemporary oncology**

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Lung cancer is the most common malignant cancer with poor prognosis. miRNAs function as one of the most important post-transcriptional regulators of the gene expression. They are responsible for the regulation of 33% of human genes, regulate the expression of oncogenes and suppressor genes, but also they act as oncogenes or suppressors themselves.

Confirmation of the expression of miRNA-134 and miRNA-185 in malignant pleural effusions obtained from patients with lung cancer. To the best of our knowledge, there have not been many articles published that would clearly bind the relations between miRNA expression with lung cancers.

Pleural effusions obtained from patients for the routine diagnostic path by fine-needle biopsy. Real-time reverse transcription quantitative polymerase chain reaction was used to measure the expression of the miRNA-134 and miRNA-185 in pleural effusions (n=40). Some of them contained cells from LA-MPEs (n=5). The miRNAs were also examined in established human cell lines of the lung cancer, A549 and Calu-3. Both of cell lines were derived from non-small cell lung cancer (NSCLC), and both of them were used in our study as positive controls.

The expression of the miRNAs was significantly elevated in both cell lines tested, verifying them as positive controls. The material from the tested cell lines derived from pleural effusion showed the increased expression of miRNA.

The present study suggests that miRNAs can be useful diagnostic markers for the detection of NSCLC. Modifying the technique used for the isolation of malignant pleural effusions should also be considered.

**Keywords: NSCLC, lung cancer, immunology**

## **Statins as regulator of expression of integrins and metalloproteinases in prostate cancer cell lines**

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Androgens are responsible i.a. for controlling proliferation of prostate cells and their expression of integrins and MMPs. Integrins are responsible for cells' interactions whereas MMPs enable cells to digest connective tissue. Statins block HMG-CoAR – the crucial enzyme in cholesterol synthesis. There is evidence that statins may play an important role in patient with prostate cancer.

The aim of our study was to check if the statins can decrease the prostate cancer growth and the risk of it's metastasis.

Studies were carried out on human prostate cell lines and the ones treated with statins. The proliferation of cells was determined by ELISA BrDU and cytotoxicity using Cytotoxicity Detection Kit. The expression and activity of e.g. AR, Akt, HMG-CoAR, MMPs, integrins were analyzed at mRNA and protein level (Western Blot, RT-PCR). Zymography was used to analyze the cells' secretion of MMPs, whereas their invasive potential was measured in Boyden chambers.

Statins inhibited the Akt and integrins pathway, MMP-2/9 expression both in androgen-dependent and independent cells but in the different manner. Silencing of the HMG-CoAR expression upregulated the expression of caspase-3 and -9, inhibited integrins and N-cadherin expression in androgen-independent cells and increased the E-cadherin reexpression.

The studies has shown that migration of prostate cancer cells can be inhibited by inhibitors of HMG-CoAR. We try to explain the mechanisms of action for statins as the regulators of the androgen synthesis pathway what gives hope for statins to be used in the prostate cancer treatment. This work was supported by MNISZW grant: K/ZDS/005888; UJCM, Kraków

**Keywords: androgen receptor, 3-hydroxy-3-methylglutaryl-coenzymeA reductase (HMG-CoAR), cadherin, prostate cancer, prostate tissues, migration**

## **Progranulin as important factor in development of haemarthropathy**

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Progranulin (PGRN) is a pleiotropic growth factor with anti-inflammatory and immunomodulatory properties. Numerous studies indicate that PGRN is an important molecule in the pathogenesis of osteoarthritis (OA), rheumatoid arthritis (RA) and other arthritis associated diseases.

The goal of the current study is to investigate the potential role of PGRN in mediating the pathogenic mechanisms of HA and to assess previously unreported PGRN levels in serum from HA patients.

Serum PGRN levels were measured by enzyme-linked immunosorbent assay (ELISA) in patients with end-stage knee joint HA (n=20) and end-stage primary knee joint OA (n=20) who met the inclusion and exclusion criteria specified in a study protocol. We assessed the correlation between serum PGRN levels and the age, sex, weight, height, type and severity of coagulation defect, presence of clotting factor inhibitors, comorbidities, and the use of clotting factors within 1 month preceding the study.

The average serum PGRN levels in HA patients was 349.15 ng/ml (232.8–415.6 ng/ml) and in OA patients 148.3 ng/ml (112.1–275.3 ng/ml) with statistically significant differences between the both groups ( $p < 0.015$ )

This study demonstrates increased circulating PGRN serum levels in patients with HA compared to OA and provides new insights into the mechanisms underlying the pathogenesis of HA indicating a new potential target for therapeutic intervention.

**Keywords: haemarthropathy, osteoarthritis, progranulin**



## Repeatability in interpretation of Narrow Band Imaging

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Narrow Band Imaging (NBI) is an endoscopic examination that uses the differences in absorption of light by blood and surrounding tissues. It allows visualize vessels of mucosa and submucosa. According to the classification of Ni, 5 types of vascular patterns are distinguished. Types I-IV are characterized by benign, type V by malignant lesions. It is an approved diagnostic method in the differentiation of benign and malignant lesions based on classification of the vascular pattern within the lesion. However, studies of endoscopic examinations have shown possible variability in the inter-rater agreement of NBI interpretations.

Evaluation of the inter-rater agreement of interpretation of NBI examinations of vocal fold lesions amongst otolaryngologists with different level of experience.

Three otolaryngologists evaluated 168 recorded NBI examinations of vocal fold lesions. Inter-rater agreement was calculated using the unweighted Fleiss' kappa statistic (Kf).

Inter-rater agreement amongst otolaryngologists differs from poor ( $Kf=0,192$ ;  $p<0,0001$ ) to moderate ( $Kf=0,443$ ;  $p<0,0001$ ). Best agreement concerns type III and II in Ni classification of vascular patterns within lesion. Differentiation of malignant and benign lesions was more consistent ( $Kf=0,265-0,5$ ;  $p<0,0001$ ), but still the level of agreement was not satisfactory.

This study demonstrates a limited level of inter-rater agreement of NBI examinations if the recordings are interpreted without clinical history of the patient. The investigator's experience is of great importance for the accurate assessment of vascular pattern in the NBI.

**Keywords: Narrow Band Imaging, inter-rater agreement, vocal fold lesions**

## **Biopolymer conduit in nerve reconstruction in female rats after ovariectomy and estrogen supplementation**

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Nerve damage is a serious clinical and socioeconomic problem, occurring in 2-3% of the total number of injuries. The results of treatment of extensive injuries remain unsatisfactory, which is why substances improving nerve growth are being searched for. Estrogens are known to have antiapoptotic and neuroprotective effects apart from their endocrine functions.

The aim of this research is to evaluate how estrogens influence peripheral nerve regeneration in the model of autograft as well as nerve repair with chitosan conduit.

Enhancing nerve regeneration with a scaffold could prevent from developing neuromas and aftereffects of collecting the autograft. We present the results of an experiment conducted on 32 female Wistar rats which were subjected to bilateral ovariectomy and resection of 10 mm fragment of sciatic nerve. Rats were divided into four groups: autograft, autograft with estrogen supplementation, chitosan conduit and chitosan conduit with estrogen supplementation. The evaluation of the number of nerve fibers, average nerve fiber diameter, number of inflammatory cells, autotomy and muscle mass measurement were performed 18 weeks after the surgery. The level of estrogens in serum was controlled every 4 weeks.

Results in the group with chitosan conduit with estrogen supplementation were significantly different from the results of the control group. Estrogen supplementation improved nerve growth and reduced the number of inflammatory cells in the group with chitosan conduit.

There was no statistically significant difference between the results in groups with autograft. Present study shows beneficial effects of estrogens on nerve regeneration in chitosan conduit group.

**Keywords: nerve regeneration, biopolymer conduit, estrogens, inflammation**

## The prevalence of *Ureaplasma urealyticum* and *Ureaplasma parvum* in the population of students

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The prevalence of *U.urealyticum* and *U.parvum* among healthy, young people in Poland is unknown due to the lack of adequate research. *U. parvum* causes infection asymptomatic usually but *U. urealyticum* can cause NGU (nongonococcal urethritis) and other diseases.

The aim of the study was to determine the frequency of infections among young, sexually active students, as well as to demonstrate the risk factors for this infection.

The study was conducted from 12.2017 to 03.2018. The study group consisted of 57 students aged between 20 and 30 years old(31 M, 26 W, median age: 23 +/-1,5) all after sexual initiation. First void urine samples was collected and transported to the Department of Medical Microbiology, School of Medicine in Katowice Medical University of Silesia. All subjects completed appropriate questionnaires. The presence of ureaplasma DNA was detected by PCR.

*U.parvum* DNA was demonstrated in 15,8% of samples. None of these samples was positive for *U. urealyticum*. More frequent occurrence of the positive results among the group of students having anal sex was observed (25% vs 10.81%) and also in persons who do not always use condoms(17.65% vs. 13.04%), but these differences were not statistically significant. There was no positive result in direction of mycoplasma DNA in people who did not have sex in the last 6 months.

*U.parvum* was found more often in students having sex in the last 6 months, having anal sex and having sex without condoms, which is consistent with the published data. The limitation of this study was small number of students which may be related to the lack of positive results for *U. urealyticum*.

**Keywords:** *Ureaplasma parvum*, *Ureaplasma urealyticum*, sexually transmitted infections, polymerase chain reaction

## **A prostaglandin analogue – tafluprost modulates survival and synaptic connections of inner retina neurons in mice retinal explants culture**

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To evaluate impact of prostaglandin analogue – tafluprost on survival and synaptic connectivity of inner retina neurons in transgenic L7Cre mice retinal explants culture.

Ten transgenic mice of L7Cre strain having red endofluorescence within retinal bipolar cells were sacrificed by IP anesthetics overdose, eyeballs were removed, retinas isolated and placed in tissue culture inserts. Retinas were cultured in neuronal-specific medium with or without addition of 0,075 µg/ml of tafluprost. The culture medium was exchanged every 2nd day and collected for LDH and glutamate assays. After 7 days explants were fixed with 4% PFA and stained as a whole tissue with anti-β3-tubulin, anti-NeuN or anti-synaptophysin antibody.

Density of β3-tubulin-positive cells in ganglion cell layer (GCL) was similar in both treated and untreated explants after 7 days of culture (267±59 cells/mm<sup>2</sup> vs 220±38 cells/mm<sup>2</sup>, respectively; p>0,05). The density of NeuN-positive cells in GCL was slightly higher after tafluprost treatment, suggesting higher density of GCL interneurons (375±42 cells/mm<sup>2</sup> vs 299±35 cells/mm<sup>2</sup>, respectively; p<0,03). The density of cells positive for synaptophysin in inner plexiform layer (IPL), presuming to represent amacrine cells, was significantly higher in treated explants (639±147 cells/mm<sup>2</sup> vs 258±70 cells/mm<sup>2</sup>, respectively; p<0,00005). Density of bipolar cells showed no significant differences between groups. The decline of LDH activity in culture medium was slightly slower after tafluprost treatment.

Tafluprost has no clear neuroprotective potential towards inner retina neurons, except for GCL and IPL interneurons (presumably amacrine cells) by modulating their survival and synaptic connectivity.

**Keywords: tafluprost, retinal explants, amacrine cells**

## **Metallothionein-mediated neuroprotection of retinal ganglion cells using organotypic retinal explants culture**

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To evaluate retinal ganglion cells (RGC) survival under metallothionein (MT) treatment in rat retinal explants culture.

Four Wistar rats received FluoroGold (FG) injection into superior colliculi of midbrain to retrogradely label RGC. After 5 days from FG injection, rats were sacrificed by anesthetics intraperitoneal overdose, eyeballs were removed and retinas isolated, and placed in tissue culture inserts. Retinas were cultured in neuronal-specific medium with or without addition of 1 µg/ml of MT2. The culture medium was exchanged every second day and collected for LDH and glutamate assays. After 7 days explants were fixed with 4% paraformaldehyde and stained as a whole mounted tissue with anti-β3-tubulin antibody and TUNEL for apoptotic cells. The RGC density in explants was evaluated for FG labeling using ImageJ software.

Density of FG-positive cells was significantly higher in explants cultured for 7 days in medium supplemented with MT2 than in explants in medium without MT2 supplementation ( $645 \pm 111$  cells/mm<sup>2</sup> vs.  $343 \pm 157$  cells/mm<sup>2</sup>, respectively;  $p < 0,003$ ). The LDH levels presented decreasing trend, however in explants treated with MT2 the LDH activity decline was significantly slower when compared with non-treated group, suggesting more cells surviving in the treated explants (after 7 days of culture the LDH activity in treated explants was decreased to 22% of initial levels at day 3 and to 15% in non-treated explants;  $p < 0,01$ ).

Treatment with MT2 exerts neuroprotective effect expressed in prolonged survival of RGC in rat retinal explants.

**Keywords: retinal ganglion cells; metallothionein**

## Level of sensitivity to fluoroquinolones of the uropathogens with particular emphasis on alert pathogens

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Elderly patients are particularly predisposed to UTI because of several risk factors prevalence. According to the FDA, side effects associated with fluoroquinolones (FQNLs) may outweigh benefits for patients with i.a. uncomplicated UTI. FDA revealed that systematic use of FQNLs is associated with serious side effects. Since 2017 the European Medicines Agency is reviewing FQNLs to evaluate the persistence of side effects. As a consequence, European Commission will issue a directive regulating usage of FQNLs in EU, but for now FQNLs are mentioned as a first-line drugs in many recommendations.

The aim of our study was to demonstrate the level of sensitivity to FQNLs of etiologic agents of UTI among elderly patients, including Gram-negative rods with ESBL mechanism of resistance.

We studied 264 infection control cards of UTI diagnosed patients hospitalized in the John Paul's II Geriatric Hospital in Katowice. Among geriatric patients' infections were caused mostly by *E. coli* (178), *K. pneumoniae* (33), and *P. mirabilis* (23). *E. faecalis* (6) and *C. albicans* (4) were the less common uropathogens.

Thirty-eight of them were alert pathogens, such as *E. coli* ES $\beta$ L (19) and *K. pneumoniae* ES $\beta$ L (14). Fifty-three (29.94%) of 177 cases of infection caused by *E. Coli*, were revealed as resistant to FQNLs, and 14 (43.75%) of 32 cases of *K. pneumoniae* infections were FQNL-resistant.

Our study showed that: 1) uropathogens are often resistant to FQNLs, thus these antimicrobial agents should not be used in empirical treatment, but only in targeted therapy 2) because of a large percentage of UTI caused by alert pathogens, especially ES $\beta$ L-producers, they may pose a therapeutic problem in the future.

**Keywords:** fluoroquinolone uropathogen urinary tract infection geriatrics alert pathogen antibiotic resistance

## **Life shortening gene - allelic discrimination of Apolipoprotein E within Silesian population**

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Apo-E gene along with atherosclerosis and dementia syndromes such as Alzheimer disease are problems which concern many people. Nowadays medicine has still not recognised an effective therapy for those illnesses. ApoE gene polymorphism determines an apolipoprotein-E variant. There are three variants recognised, from which ApoE3 is the most common one and said to be a proper one, not related to pathogenesis. The other variants predispose to illnesses, for instance ApoE4 to atherosclerosis and Alzheimer's disease. ApoE gene has an influence on life expectancy, thus determining the correlation between ApoE gene polymorphism and gender is an intriguing research problem.

Our research aim was to examine the correlation between rs429358 and rs7412 in relation to patients' gender, age, hypertension, coronary disease occurrence, level of cholesterol in blood.

Using a fluorescence- labelled probes a Real Time PCR was conducted, thanks to which selected DNA fragments amplification and marking could have been reached. The polymorphism of ApoE rs429358 and rs7412 was examined in the research sample of 381 patients from Southern Poland throughout determining them 762 times.

In our research group there were 1 person with 11 times elevated risk of Alzheimer's disease occurrence.

Significance of genotypes in relation to gender, age, diabetes occurrence, hypertension, coronary disease and cholesterol level in blood was determined.

**Keywords: genotyping techniques, risk factors, Alzheimer disease, atherosclerosis, diabetes mellitus, coronary disease**

## **The correlation between iron concentration, activity of antioxidant system and sperm motility in physiological semen**

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Human semen contains many macro and microelements, that have important influence on sperm quality, resulting in male fertility. Iron is part of enzymes and metalloproteins. It participates in redox reactions, is involved in electron transport, but in too high concentrations it has a toxic effect. Then it leads to lipid peroxidation of sperm cell membranes, which causes their damage and lower sperm motility. The protective role in this process is played by antioxidant enzymes.

The aim of this study is to investigate the association between sperm motility and the level of iron and oxidative stress parameters.

samples were collected from 107 patients (mean age 33 years) with normal spermiogram. The semen specimens were analyzed according to WHO standards. Median of the rapid progressive motility (a) after 1 h (%) was used to make a division of the study population into the following two groups: low (n = 54) and high (n=53) level of motility. The semen plasma were determined: iron, protein and MDA concentrations, SOD, GST, G6PD, GR activities. Additionally, the analysis included SOD and MDA in sperm lysate.

As a result of statistical analysis, in the group with higher sperm motility, statistically significant lower iron concentration was found, with simultaneous increase in G6PD, GR and SOD activity as compared to the group with lower mobility.

In conclusion, we report that higher iron concentration in seminal plasma has negative effect on sperm motility. However, the activity of SOD, G6PD and GST, that represent the antioxidative defense system function, plays important role in increasing semen quality.

**Keywords: sperm mobility, iron, malondialdehyde, glucose-6-phosphate dehydrogenase, glutathione reductase, superoxide dismutase, glutathione S-transferase, fertility**



## How do mesenchymal stem cells affect biological properties of cancer cells?

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Unique properties of mesenchymal stem cells (MSCs) make them attractive tool for biomedical applications. MSCs synthesize a number of soluble mediators that contribute to the tissue regeneration. However, the safety of their use raises many questions due to the potential risk of tumour progression. To better understand the interaction between stem cells and bladder cancer cells we analyzed the effect of MSCs secretome on biological characteristics of cancer cells.

To analyze influence of MSC-secreted factors on biological characteristics of bladder cancer cells.

Three human bladder carcinoma cell lines: 5637 (ATCC HTB-9), HB-CLS-1 (CLS) and HT-1376 (ATCC CRL 1472) were cultured in the secretome of human adipose-derived stem cells ASC52telo (ATCC SCSR-4000). Viability (MTT assay) and the capacity for self-renewal (clonogenic assay) of cancer cells were analyzed after 72h incubation in mesenchymal stem cells conditioned medium (MSC-CM).

Analysis indicate that incubation in the medium that contains soluble mediators secreted by MSCs increase viability of cancer cells in compared to control (cells cultured in standard growth medium) Furthermore, single cells incubated in MSC-CM showed greater ability to grow into colonies.

Our results revealed that mediators secreted by MSCs induce viability of cancer cells and their capacity for self-renewal, what indicates that MSCs may influence bladder cancer progression. Yet, accurate assessment of the tumorigenic role of MSCs in cancer recurrence requires additional research in vivo.

**Keywords: mesenchymal stem cells, bladder cancer, tumor progression**

## Prevalence of macrolide, lincosamide, and streptogramin B resistance phenotypes among *Staphylococcus epidermidis* clinical strains

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*Staphylococcus epidermidis*, member of coagulase-negative staphylococci is one of the most common constituent of human skin and mucosa membranes microbiome. The extensive use of macrolide, lincosamide and streptogramin B (MLS<sub>B</sub>) antibiotics in infections caused by Gram-positive bacteria in consequence led to increased resistance among staphylococci.

The aim of the presented study was to evaluate resistance phenotypes of *S. epidermidis* strains isolated from hospitalized patients with bloodstream infection to macrolide, lincosamide and streptogramin B (MLS<sub>B</sub>).

In the study 68 *S. epidermidis* clinical and 2 reference ATCC (American Type Culture Collection) strains were analysed. Susceptibility to MLS<sub>B</sub> antibiotics, including detection of the resistance mechanisms, was analyzed with the use of double-disc diffusion tests with erythromycin (15µg/disc) and clindamycin (2µg/disc) following the procedure recommended by EUCAST (European Centre for Disease Prevention and Control).

Forty six (67,65%) out of 68 clinical *S. epidermidis* isolates, were resistant to erythromycin and 34 (50%) to clindamycin. In the presented study three resistance phenotypes were observed: 34 strains (50%) displayed the cMLS<sub>B</sub> phenotype, 5 (7,35%) the iMLS<sub>B</sub> phenotype, and 7 (10,29%) the MS<sub>B</sub> phenotype.

The majority of analyzed *S. epidermidis* strains were erythromycin resistant and predominantly displayed the cMLS<sub>B</sub> phenotype.

**Keywords:** *S. epidermidis*, macrolides, antibiotic resistance

## Short-term contact of the nickel solution modifies the transport of sodium ions

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Nickel is often used in the production of items that are used daily i.a. in bathroom fitting and coins (improving their durability and their appearance). Contact with nickel may cause hypersensitivity and / or allergy. This is probably related to the influence on changes in the transport of ions, mainly sodium, in keratinocytes and immunocompetent cells.

The aim of the study was to analyze changes in electrophysiological parameters under the influence of 0.1 mM nickel solution in the conditions of inhibited chloride ion transport.

In the experiment, skin fragments from the ear of the New Zealand White rabbits were used. The Ussing method was used in the research, which involves the measurement of transepithelial electrophysiological parameters. Parameters such as: transepithelial electric potential under stationary conditions, changes in transepithelial electrical potential during 15 seconds of mechanical and chemical stimulation, electrical resistance were measured.

The tested skin fragments showed an electrical resistance of  $10754 \Omega / \text{cm}^2$ , which is related to the assessment of tissue viability and reactivity. 15 seconds contact of the skin with the nickel solution caused a repeatable potential changes of -1.4 mV.

Short-term contact with nickel ions affects the transepithelial potential of the skin. A nickel solution with a concentration of 0.1 mM by modifying the transport of sodium ions in the skin may contribute to hypersensitivity and / or skin allergy.

**Keywords: nickel, skin, allergy, hypersensitivity**

## Students' stethoscopes as a vector of healthcare-associated infections - a pilot study

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Healthcare-associated infections are an immense problem in medicine nowadays. Contaminated stethoscopes and medical personnel's hands may be vectors of microorganisms and become a source of nosocomial infections.

To assess the bacterial contamination of medical students' stethoscopes as well as the cleaning habits.

The swabs were collected from membranes and bells of 66 stethoscopes. At the same time 66 students filled in a survey. Bacterial identification was made with phenotypic methods. Assessment of susceptibility was determined in accordance with the European Committee on Antimicrobial Susceptibility Testing (EUCAST) guidelines.

The study involved 24 students from 3rd, 29 from 4th and 13 from the 5th year of studies (mean age 23 years, 53% male). Sixty-four (97%) out of the 66 stethoscopes were contaminated. Among 277 isolated strains, there were 55,2% of *Staphylococcus* spp, 24,2% of *Bacillus* spp., 15,9% of *Micrococcus* spp., 4% of *Streptococcus* spp., 0,7% of *Corynebacterium* spp. Within the *Staphylococcus* spp. strains 31,4% (n=48) were resistant to macrolides, lincosamides, and streptogramin B, 11,8% (n=18) were methicillin-resistant and 10,5% (n=16) were resistant to ofloxacin. Overall, 30,3% of the students declared that they cleaned their stethoscopes after each patient, 27,3% several times a day, 13,6% once daily, 28,8% once weekly or rarer. The most often cleaned parts were membrane and bell (98,5 and 62,1%, respectively). Majority of surveyed (92,4%) used hand disinfectant gel to clean their stethoscopes.

Students may contribute to spread of nosocomial infections via their stethoscopes. The minority of students have proper hygiene habits.

**Keywords:** medical students, stethoscope contamination, stethoscope hygiene, disinfection

## **Changing the electrophysiological parameters of the skin under the influence of long-term action of nickel ions under the conditions of inhibited chloride ion transport. In vitro study**

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The skin is the largest organ of the human body. Thanks to the complex construction, it can perform many functions, including participation in the synthesis of vitamin D, protection against excessive water loss penetration of microorganisms and participation in thermoregulation. Nickel is a prevalent element. The most common ways to enter our body are the digestive tract, respiratory tract and skin. The effects of chronic exposure to nickel can be pneumonia, asthma, cancer, allergies.

The aim of this study was to determine the long-term effect of nickel cation solution on electrophysiological parameters of the skin. At work it was checked whether nickel solutions are able to induce repetitive changes in the potential and electrical resistance, and by affecting the transport of sodium ions cause changes in the skin leading to hypersensitivity and / or allergy.

In this experiment there have been used 10 New Zealand white rabbits of both sexes. The animals came from the Silesian Medical University in Katowice. The experimental material was the skin cut from the ventral and thoracic part of rabbits. A chamber for testing electrophysiological parameters and a 0.1 mM nickel solution were used.

The examined fragments of tissues showed electrical resistance of (median) value 27466  $\Omega$  / cm<sup>2</sup> and confirmed tissue viability and reactivity. The used nickel solutions caused repetitive potential changes of -1.13 mV (median).

Nickel ions influence the transepithelial potential of the skin. A nickel solution by modifying ion transport can contribute to hypersensitivity and / or skin allergy.

**Keywords: skin, nickel, allergy**

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# **SESSION OF BIOTECHNOLOGY AND GENETICS**

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## **The impact of degradation on the features of poly(L-lactide-co-glycolide) films proposed for tissue engineering and regenerative medicine**

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Porous biodegradable films have been paid greater attention in the field of tissue engineering and regenerative medicine. Rapid progress on these areas require to develop novel solutions providing biocompatibility and stable degradation rate. Poly(lactide-co-glycolide) copolymers are the most popular materials in films formulation.

The aim of this study was a determination of structural, surface and biological abilities of films formulated from novel poly(L-lactide-co-glycolide) (L-PLGA) copolymer.

Films were obtained from high molecular (100000 Da) L-PLGA (85:15) by solution casting method. The copolymer was synthesized in bulk with the use of Zr(Acac)<sub>4</sub>. The properties of the L-PLGA films were determined by NMR, DSC, SEM. To determine the biocompatibility of L-PLGA films the <sup>18</sup>Co line was used according to the guidelines outlined in ISO 10993.

Degradation study was performed during 294 days. In this period the changes in the content of L-PLGA was noted. Additionally reduction in the average length of glycolidyl segments and no significant changes in lactidyl segments was noted. A gradual decrease for glass transition temperature was noted in this period. Moreover, the films revealed porous surface. During degradation decrease of a porosity and solidity ratio was noted. In indirect method and direct contact films were defined as biocompatible. Films presented stable degradation with no rapid and uncontrolled changes.

The results suggest that L-PLGA films present great potential for tissue engineering and regenerative medicine. L-PLGA films possessed structure, surface and biological abilities useful for further study.

**Keywords: (L-lactide-co-glycolide), films, tissue engineering, regenerative medicine**



## **Apigenin - a potential inducer of differentiation of glioblastoma multiforme U87MG cell line with silenced miR148 and miR210 genes**

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Glioblastoma multiforme (GBM), made of low-differentiated astrocytes, one of the most common and most malignant brain tumors characterized by rapid growth rate, high invasiveness and resistance to treatment, is also characterized by increased expression of miR148 and miR210 genes. The effects of apigenin on the differentiation of cells by the inhibition of Id1 protein expression (Inhibitor of differentiation or DNA binding protein 1) are reported.

The aim of the study was to evaluate the potential impact of apigenin on the differentiation of glioblastoma multiforme U87MG cells with the silenced miR148 and miR210 genes.

The U87MG cells were grown in EMEM + 10% FBS (temp. 37°C, 5% CO<sub>2</sub> atmosphere), and were transfected with 0.25nM siRNA specific for a miR148 gene, and 48h after transfection cells were exposed to apigenin (250nM, 24h). Then RNA was extracted from GBM cells and the copy numbers of mRNA of genes involved in cell differentiation (GFAP,  $\beta$ -tubulin, S100beta) were determined using the RT-QPCR reaction with using GoTaq® 1-Step RT-qPCR System and a set of specific primers. The expression of proteins encoded by these genes was analyzed by flow cytometry and FITC-conjugated specific antibodies. The expression profiles of the examined genes and proteins in the transfected and untransfected cells were compared.

There were changes in the expression of the examined genes and proteins between transfected and untransfected glioblastoma multiform cells indicating the induction of the differentiation process.

Exposure of the glioblastoma cells of the multiform U87MG line in combination with miR148 and miR210 genes silencing may be a potential new strategy for the induction of their differentiation.

**Keywords: glioblastoma multiforme, apigenin, siRNA, miR148, miR210, differentiation**

## **Interaction of THP-1 monocytes with polycarbonate urethane and polycarbonate silicone nanofibrous mats**

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Synthetic polymers are widely used in medicine and pharmacy. These materials have an important meaning in drug delivery systems, regenerative medicine or as polymeric scaffolds for tissue engineering. Moreover, synthetic materials are considered to be useful in the artificial heart valves production.

In vitro analysis of the interaction between human monocytic THP-1 cells and polycarbonate urethane and polycarbonate silicone nonwoven nanofibrous mats. The general idea was to apply these polymers to produce a novel generation of heart valves, instead of traditional, commonly used biological and mechanical valves.

Nanofibrous mats were made from commercially available materials: ChronoFlex AR, ChronoFlex AL (polycarbonate urethanes) and ChronoSil (polycarbonate silicone), using NEU-BM electrospinning instrument. Their structure was analysed using SEM. THP-1 cells were purchased from ATCC and differentiated to a macrophage-like phenotype using PMA. Number of cells attached to polymeric surfaces (after 48h of incubation) was evaluated using the LDH activity assay. Nunc™ Thermanox™ coverslips were applied as control substrata.

THP-1 cells adhered to the polymeric mats similarly to the control substratum. The lowest adhesion was seen on ChronoFlex AR.

Although the tested materials are considered as bioinert, human monocytes/macrophages are able to attach efficiently to them. Therefore, possibility of the inflammatory reaction should be taken into consideration during evaluation of clinical safety of these materials.

**Keywords: polymers, polycarbonate urethane, polycarbonate silicone, nanofibrous mats, THP- 1 cells**

## Influence of new xanthone derivatives on breast cancer cells

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Breast cancer is the most common malignancy in women. New strategies for cancer treatment are needed and they are being developed. One of the promising treatment strategies involves the use of xanthenes which are heterocyclic compounds obtained from natural sources or through chemical synthesis.

The aim of the study was to investigate the influence of new xanthone derivatives on the proliferation, apoptosis, migration, and invasion of breast cancer cells.

Four synthetic and two natural xanthenes ( $\alpha$ -mangostin and gambogic acid) were tested on cell lines representing breast cancer: MDA-MB-231 and T-47D. Synthetic xanthenes were obtained from the Department of Bioorganic Chemistry, Jagiellonian University, Kraków. IC50 values were determined using MTS assay; the processes of apoptosis and cell proliferation were estimated microscopically. For migration-invasion assessment in vitro the wound healing and invasion through Geltrex-coated inserts assays were used. Expression of genes involved in apoptosis (BCL-2, BAX) and invasion (MMP-2, MMP-9, VCAM-1, VEGF) was estimated by Real-Time<sup>TM</sup> RT-PCR.

IC50 values of the studied xanthenes were between 12-27  $\mu$ M in MDA-MB-231, and 17.4-57  $\mu$ M in T-47D cultures. Results demonstrated strong anti-proliferative and pro-apoptotic activity of all studied xanthenes. Migration and invasion assays revealed stronger inhibitory effect of xanthenes in T-47D cultures. All xanthenes also performed significant influence on the expression of the studied genes.

Altogether, results suggest that xanthone derivatives perform anti-proliferative and pro-apoptotic influence, and significantly reduce invasion potential of breast cancer cells.

**Keywords: breast cancer, xanthenes, apoptosis, invasion, chemoresistance**

## Evaluation of Wnt/ $\beta$ -catenin signaling pathway expression in adipose derived stem cells under the influence of conditioned medium from limbal epithelial stem cells

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The Wnt/ $\beta$ -catenin signaling pathway plays an important role in cell differentiation. Adipose derived stem cells (ADSC\_D) are multipotent. Limbal epithelial stem cells (LESC\_C) are significant in self-regenerating of corneal epithelial cells (CEC). An alternative for transplant of corneal limbus can be ADSC.

The aim of experiment was to evaluate changes in WNT-related genes expression in ADSC\_D after coculture with indirect contact with LES C in comparison to control cells (ADSC\_C).

ADSCs were grown in a conditioned medium derived from LES C for 21 days. Total RNA was extracted from cells using High Pure RNA Isolation Kit. The gene expression profile was determined by oligonucleotide microarrays using HG-U133A 2.0 gene chips (Affymetrix). WNT-related genes (663 ID mRNA) were selected from the NetAffx Analysis Center database of Affymetrix (<https://www.affymetrix.com/analysis/index.affx>). Data analysis was carried out using Gene Spring 13.0 platform, PL-Grid Infrastructure and Panther programs. To determine the significant genes, a one-way ANOVA with the Benjamini-Hochberg multiple testing correction followed by the Tukey HSD post-hoc test were used.

Clustering data based on stated parameters showed that gene expression profile of ADSC\_D is more similar to LES C than ADSC\_C. The next results showed that 238 ID mRNA change their transcriptional activity ( $p < 0,001$ ). Analysis of differentiating ID mRNAs revealed 8 IDs characteristic only for ADSC\_D groups in comparison ADSC\_C. Moreover analysis of common ID mRNAs for LES C and ADSC\_D both vs. ADSC\_C showed 27 ID. Among these transcripts all of them have the same direction of change the expression in LES C and ADSC\_D.

Indirect coculture of ADSC and LES C change the expression of WNT-related genes.

**Keywords:** Wnt/ $\beta$ -catenin, ADSC, LES C, differentiation, microarrays

## **The impact of mesenchymal stem cells on the proliferation rate of limbal epithelial stem cells stimulated with LPS**

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The niche of limbal epithelial stem cells (LESC) is responsible for the reconstruction and proper efficiency of the cornea. Damage can lead to dysfunction of these cells and results in the appearance of inflammation. Mesenchymal stem cell that comes from adipose tissue (ADSC) can affect LESC proliferation by secretion of paracrine factors.

To evaluate the effect of adipose-derived stem cells (ADSC) on the proliferation and metabolic activity of limbal epithelial stem cells treated with lipopolysaccharide (LPS).

LESC was treated for 24h with LPS to induce inflammation. A scratch assay was carried out to assess the migration and proliferation of cells. The LESC monolayer was scratched and rinsed with phosphate buffered saline (PBS) to remove detached cells. Subsequently, cells were incubated for 24h with standard medium (SM-MSC) and conditioned medium (CM-MSC) from mesenchymal stem cells derived from adipose tissue. Images of the monolayer were taken at selected time points and the size of the gap was measured using Image J.

For statistical analysis, the ANOVA test was applied, which showed statistically significant differences between the studied groups indicating a significant effect of the conditioned medium on LESC proliferation. In addition, it was observed that LPS had no effect on the cell proliferation.

Adipose-derived stem cells secrete growth factors that accelerate the proliferation rate of limbal stem cells. Bacterial lipopolysaccharide at 2  $\mu\text{g} / \text{ml}$  concentration does not affect the LESC proliferation rate.

**Keywords: limbal epithelial stem cells (LESC), adipose-derived stem cells (ADSC), scratch wound healing assay, lipopolysaccharide (LPS)**

## Impairment of invasiveness of colon cancer cells by novel xanthone derivatives

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Analyzing the anti-oxidative, anti-proliferative, immunomodulatory, and anti-inflammatory effects of natural xanthenes isolated from *Garcinia mangostana* fruits, prompted researchers to screen for new xanthone derivatives, both from natural sources as well as through chemical synthesis, which would be potent anti-cancer drugs.

The aim of this study was to investigate the influence of new xanthone derivatives on invasiveness of LoVo colon adenocarcinoma cells.

LoVo (ATCC No. CCL-229) cell cultures were treated with four synthetic xanthone derivatives obtained from the Department of Bioorganic Chemistry, Jagiellonian University, Kraków. Additionally, two natural xanthenes (gambogic acid,  $\alpha$ -mangostin) were included in the study. Cell cultures were treated under non-cytotoxic conditions and submitted to the following assays: invasion through Geltrex-coated inserts, adhesion to Matrigel, adhesion to endothelial cells, wound healing, and clonogenic survival assay. Further, expression of 10 genes involved in migration, adhesion, and angiogenesis were studied by Real-Time™ RT-PCR. Cells migration was evaluated by wound healing assay and inserts penetration.

All tested compounds performed significant influence on the expression of matrix metalloproteinases (MMP) 2 and 9, VEGF, and ICAM-1. Invasion index and number of colonies was bigger in the chemically obtained xanthone. Both groups of xanthenes are more effective than conventional drugs (cisplatin and 5-fluorouracil).

The use of the studied xanthenes at non-cytotoxic concentrations strongly impairs invasiveness of LoVo colon cancer cells in vitro.

**Keywords:** xanthone, cancer invasiveness, *Garcinia mangostana*

## Characteristic of cellular landscape of diffuse glioma – xCell analysis

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Cellular infiltrates in tumours have been investigated for a long time. While the immune response in glioma contributes to tumour growth control, infiltrating cells may degrade extracellular matrix and secrete growth factors, leading to progression.

The aim of this study is to quantitatively characterise cellular populations in glioma and determine their impact on patients' survival and life quality.

Data analysis was performed with R programming language. The next generation sequencing (NGS), methylation, copy number alteration(CNA), mRNA and protein expression data of 1133 patients with diffuse gliomas were downloaded from The Cancer Genome Atlas. The cellular infiltrates were quantitatively estimated by xCell – a novel bioinformatic tool based on gene expression signatures from sorted cellular populations.

Initial analysis using GLM and ANOVA indicated correlation of most cell infiltrates with grade, histological subtype, survival and previously described molecular subtypes. Interestingly, some features like seizures and infratentorial location were associated with specific T-cell infiltrates. Further analysis with tSNE and hierarchical k-means clustering lead to the selection of samples with poor prognosis. Those were more infiltrated with M2 macrophages, CD4+ memory T-cells and less populated by CD8+ T-cells and neurons. Moreover, in this cluster IDH1, TP53 and ATRX mutations occurred infrequently.

Bioinformatics deepens our insight into cancer biology. This study shows a prominent role of stroma in gliomagenesis. We hope that this will lead to the development of new diagnostic, prognostic and treatment options.

**Keywords:** glioma, xCell, R, TCGA, neurooncology, stromal reaction, immuno-oncology

## **Influence of hypothermia on mitochondrial potential and apoptosis in cells subjected to oxidative stress**

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Oxidative stress causes mitochondrial uncoupling leading to decreased production of ATP and apoptosis. Uncoupling involves disturbing the concentration gradient of protons on both sides of the mitochondrial membrane and disturbance of membrane potential. Doxorubicin is a widely used antineoplastic drug, which is well-known for its pro-oxidative mode of action. During electron transfer from NADPH/NADH to the quinone of the doxorubicin, radicals responsible for the oxidative stress are formed. In medicine, oxidative stress plays a key role in ischaemia-reperfusion injury. To limit this effect hypothermia is increasingly used in the course of the treatment of stroke and cardiac arrest disorders. It has also been recently introduced to cancer therapy to prevent side effects of cytotoxic drugs.

The aim of this work was to test whether hypothermia delays mitochondrial membrane potential collapse and activation of apoptotic pathway in human cervix adenocarcinoma cells treated with doxorubicin.

HeLa cells were cultured in normothermic (37° C) and mild hypothermic (33° C) conditions up to 72 hrs in the presence of different concentrations of doxorubicin. DNA ladder assay was used to test apoptosis. To test the effect of hypothermia on mitochondria, membrane potential-sensitive fluorescent probe was used.

In cells grown in normothermia, greater DNA fragmentation occurred than in hypothermia. Less prominent DNA fragmentation was observed in lower temperature conditions. Hypothermia was shown to delay onset of apoptosis in cells treated with different doxorubicin concentrations.

Altogether all the results demonstrate the protective effect of hypothermia on HeLa cells.

**Keywords: hypothermia, doxorubicin, apoptosis, oxidative stress, mitochondria**



## The study of allodynia in transgenic mice lacking Calb1 and Pvalb genes

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The Calb1 and the Pvalb genes encode the calbindin D-28k and the parvalbumin proteins respectively. Calbindin D-28k and parvalbumin are calcium protein buffers expressed in the central nervous system and peripheral neurons. The deficiency in expression of protein calcium buffers in sensory neurons may result in disruption of calcium signaling and hypersensitivity to stimuli resulting in allodynia. Allodynia is associated with the neuropathic pain and is characterized by pain perception caused by mechanical or thermal stimuli. There are two types of allodynia: mechanical and thermal allodynia, which can be examined using behavioral tests such as von Frey's filaments test and hot-plate test.

The purpose of the study was to assess the level of allodynia in transgenic mice lacking Calb1 and Pvalb genes by means of the von Frey filaments test and hot-plate test.

In the study were used transgenic mouse line B6.129-Calb1, B6.129P2-Pvalb and C57Bl6 line as a control group.

The study shows that mice lacking both calcium proteins, calbindin D-28k and parvalbumin, are more sensitive for mechanical and thermal stimuli than mice from the control group. The B6.129-Calb1 mice present lower sensitivity to the applied stimuli when compared with the B6.129P2-Pvalb mice.

The von Frey's filaments test and hot- cold plate test are useful methods for allodynia assessment in transgenic animals lacking Pvalb and Calb-1 genes expression.

**Keywords: allodynia, Calb-1 gene, Pvalb gene, calcium protein buffers, hot-plate test, von Frey's filaments test.**

## **Evaluation of the quality in honey from retail stores and polish apiaries by the White's method**

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Honey is a well-known and valued raw material produced by honey bees. Due to its beneficial health properties it is considered as a good dietary supplementation. The production of honey in Poland in 2007 was 14954 tons. Consumption of honey in Poland in 2007 amounted 16192 tons, which is about 0.42 kg / person / year of honey. An effective measure of honey quality is the assessment of hydroxymethylfurfural (HMF) concentration. HMF is a water soluble, heterocyclic, organic compound derived from sugars. It occurs naturally in most honeys and increases with heat treatment and storage of honey. Good quality honey has a low amount of HMF.

The purpose of the study was to compare the honey quality from retail stores and polish apiaries by the White's method.

In the study we used three samples of honey from retail stores such as linden honey, multi-flower honey and honey with ginseng and three samples of honey from polish apiaries like rapeseed honey, dandelion honey and cornflower honey. HMF can be detected quantitatively by White's method. The principle of the White's method is based on the absorbance detection at wavelengths of 284 and 336 nm by means of a UV-VIS spectrophotometer in a clarified aqueous honey solution.

We have observed differences in HMF concentration in honey samples. White's method is a fast and simple way to control the quality of honey by means of the HMF concentration assessment.

**Keywords: honey, White's method, UV-VIS Spectrometry**

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# **SESSION OF CARDIOLOGY**

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## Comparison of MitraClip implantation and pharmacological treatment in inoperable severe mitral valve regurgitation

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Mitral valve regurgitation (MR) is one of the most prevalent valvar heart diseases. MR can be classified as primary (anatomical) and secondary (functional) - associated with severe left ventricle dysfunction due to coronary artery disease (ischemic MR) or idiopathic myocardial disease (nonischemic MR).

The aim of the study was to compare different methods of treatment in MR in terms of clinical outcome, TTE parameters and quality of life assessment.

We included 33 patients (men - 54.5%) with inoperable severe secondary MR diagnosed using transthoracic echocardiography (TTE). The patients were divided into 2 groups: Group A (10 persons) - patients who have undergone MitraClip procedure and Group B (23 persons) - patients waiting for MitraClip procedure, with contraindications for MitraClip due to anatomical reasons or patients who did not agree for MitraClip implantation. Clinical outcomes, TTE and assessment of quality of life have been performed at baseline and after 8±2 months.

The mean age was for the whole population was 72.6±10.4 years old. The average BMI was 27.9±4.5 kg/m<sup>2</sup>. MR in all of the analyzed patients were caused by restricted leaflet motion in systole (Carpentier IIIb). There were no statistical differences between groups in NYHA scale at baseline. In Group A NYHA scale improved from 3±0.5 at the baseline to 2±0.7 after 8±2 months of having MitraClip implanted.

Comparing to pharmacological treatment, MitraClip implantation improves quality of patients' lives, nonetheless echocardiographic parameters do not improve.

**Keywords:** mitral valve regurgitation, MitraClip

## The prevalence of white coat hypertension in pediatric patients of outpatient clinic

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White coat hypertension (WCH) is a phenomenon in which patients exhibit blood pressure (BP) values above the normal range at office, and normal BP at home measurements. 24-hour ambulatory blood pressure monitoring (ABPM) is crucial in identifying WCH instead of making the final diagnosis of arterial hypertension (HT). Pharmacologic treatment of WCH should be withheld.

We aimed to assess the occurrence of WCH among pediatric patients.

We evaluated 194 consecutive children (137 males) aged 5-18 (mean- 13,98) referred to the Children's University Hospital in Cracow for first diagnostics of HT. Peripheral BP during first and subsequent control visits were measured and single ABPM was performed.

In 87 children – primary HT, 51– secondary HT and 18(9,28%)– WCH were diagnosed. 38 persons were referred for further BP control without final diagnosis. Children with primary HT (Gr.1) less often were male (68% vs 78%,  $p=0,03$ ) than those with WCH (Gr.2). 43% of patients in Gr.1 were overweight or had obesity and only 28% in Gr.2. Gr.1 had higher systolic BP values both in office measurements (134,4 vs 129,5 mmHg) and ABPM (124,7 vs 119,67 mmHg,  $p=0,01$ ), as well as higher diastolic BP (79,2 vs 74,3 mmHg,  $p=0,012$ ) and (71,47 vs 67,56 mmHg,  $p=0,001$ ) respectively. Gr.1 was characterized by significantly higher ambulatory arterial stiffness index than Gr.2 (0.41 vs. 0.36,  $p < 0.001$ ). Mean heart rate in Gr 2 was lower than in patients with secondary HT (75.52 vs. 81.84 BPM,  $p = 0.02$ ).

The incidence of WCH in children is around 9%. More men belong to this group and it is characterized by lower body weight. ABPM has a great importance in the diagnosis of HT in pediatric patients.

**Keywords:** white coat hypertension, 24-hour ambulatory blood pressure monitoring, ABPM, pediatric patients, hypertension

## The risk of sleep breathing disorders in patients during early cardiological rehabilitation after myocardial infarction

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Sleep breathing disorders are an important risk factor for cardiovascular disease and occur with frequency from 5 to 10% in general population.

Assessment of sleep breathing disorders risk based on: antropometric measurements, corrected neck circumference, Berlin questionnaire, NoSAS questionnaire and Epworth sleepiness scale.

The study group consisted of 46 patients (F:11, M:35; mean age  $64\pm 9$ ), enrolled the early cardiological rehabilitation after myocardial infarction (NSTEMI: 65,2%, STEMI 34,8%), treated with PCI (89,1%) or conservatively (10,9%).

High risk of sleep apnea was found in 59.1% of patients according to the Berlin questionnaire. The average score in Epworth scale was  $6.1\pm 3.8$  points and it correlated significantly ( $p<0.05$ ) with the plasma levels of triglycerids ( $r=0.43$ ) and HDL cholesterol ( $r=-0.41$ ). The low risk of daily sleepiness was observed in 82,6% of patients in the Epworth scale. When NoSAS questionnaire was used the high risk of sleep breathing disorders was found in 75% of patients, what correlated significantly ( $p<0.05$ ) with the weight ( $r=0,57$ ), BMI ( $r=0,55$ ), waist circumference ( $r=0,6$ ) and neck circumference ( $r=0,8$ ). No relationship was found between Epworth scale and questionnaires: Berlin and NoSAS.

High risk of breathing disorders is present in our group of patients early after myocardial infarction. The differences between used scales or questionnaires are significant, therefore, it require further investigation.

**Keywords:** cardiological rehabilitation, myocardial infarction, sleep breathing disorders, sleep apnea, daily sleepiness

## **Influence of selected methods of single blood pressure measurements' analysis on the diagnosis of hypertension in the group of young adults**

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In the group of youth, hypertension (HT) occurs with a constantly increasing frequency. A significant part of abnormal blood pressure (BP) values in case of random measurements is the white coat hypertension.

The study aimed to compare different methods of single BP measurements' analysis.

53 persons (men-25) aged 21-26 participated in the study. For 5 consecutive days, measurements of peripheral BP were performed on both upper limbs using an automatic sphygmomanometer. In addition, a single office BP measurement was performed, which was accompanied by a central BP analysis using the Sphygmocor device. The measured BP values were evaluated according to three methods: the office measurement result (Method 1), the average of the two highest measurements (Method 2) and the average from 5 days of daily measurements (Method 3).

In Method 1 high normal BP or HT were found in 22, Method 2 in 20 and Method 3 in 10 (Gr.1) participants. The high normal BP or HT detected with Method 1 were excluded by Method 3 in case of 14 (63,6%) persons (Gr.2). Gr.2 was characterized by lower heart rate (79,42 vs 86,72 BPM,  $p=0,01$ ) and body weight (67,86 vs 77,4 kg,  $p=0,04$ ) than the Gr.1. Diastolic BP values obtained by methods 1 and 3 were similar (75,43 vs. 74,28 mmHg), although significant differences were found in the results of systolic BP (123,94 vs 119,41 mmHg,  $p=0,003$ ). Method 2 detected masked high normal BP in 6 persons, and masked hypertension was found in 3 participants.

Daily BP measurements are of great importance in the diagnosis of hypertension in young people. People with normal BP values in office measurements may still belong to the masked HT group.

**Keywords: white coat hypertension, youth, blood pressure**



## Electrocardiographic features of the ventricular tachycardia in patients with implantable device - ICD/CRT

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Ventricular tachycardia (VT) is responsible for many cases of adequate ICD/CRT interventions. There were some studies trying to find some VT features that may correlate with ICD/CRT interventions, however there is still no knowledge in this field.

Comparison of the electrocardiographic features (QRS duration time, axis, cycle and VT score) in VT registered during 24-hour Holter monitoring in patients with implanted ICD or CRT.

Clinical data of 28 pts (1 female, LVEF  $30\pm 12\%$ , age  $63\pm 9$  years, MI – 21 pts, DCM - 7 pts) with ICD/CRT were analyzed retrospectively. Analysis included a 12-leads Holter recording in which at least one episode of VT was present.

Among 47 registered VT the adequate intervention was found in 13 cases (11x ATP, 2x cardioversion). Interventions occurred in 12 patients ( $67\pm 7$  years old, 2 with DCM, 10 with ischaemic cardiomyopathy; LVEF  $27\pm 8\%$ ). QRS duration time in VT terminated by ATP/CV was  $180\pm 20$  ms; 6 cases with right axis, 3 with left axis, 6 with extreme axis; mean VT score= 5,3. VT without interventions:  $62\pm 9$  years old, QRS duration time  $174\pm 20$  ms, 6 normal axis, 11 right axis, 7 left axis, 7 extreme axis; mean VT score= 4,5

VT that leads to ICD/CRT intervention were characterised by higher VT score, as well as, electrical axis was different when compared with patients without interventions. However, the significance of these findings needs further studies on bigger population.

**Keywords: ventricular tachycardia, ICD, CRT, electrocardiography**

## **Analysis of the correlation between echocardiography and electrocardiography diagnosis methods of the left ventricular hypertrophy**

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Left ventricular (LV) hypertrophy (LVH) is enlargement and thickening of the walls of the left ventricle. It might be caused due to many disorders e.g. high blood pressure, heart failure or valvular diseases. For the diagnosis of LVH different methods are used e.g. electrocardiography or echocardiography. There is still no clear evidence which method is more adequate.

The purpose of prospective analysis is an assessment of correlation between echocardiography and electrocardiography in recognition of LVH among patients diagnosed with cardiovascular diseases.

We have analyzed 216 consecutive patients, who were admitted to Silesian Center for Heart Diseases. Left ventricular hypertrophy was diagnosed on the basis of transthoracic echocardiographic criteria (left ventricular muscle's size in parasternal, short projection in end-diastolic phase >12 mm), and according to the commonly accepted electrocardiographic criteria. The correlation was calculated with Pearson's method.

According to echocardiography criteria 26 patients (12.0%) had LVH and due to electrocardiography the LVH was found only in 9 of those patients. The electrocardiographic criteria for LVH were met in 53 patients (24.5%) and 44 of them had no evidence for hypertrophy in echocardiography. The correlation between electrocardiographic and echocardiographic methods calculated with Pearson's formula was -0.74.

The current analysis indicates strong negative correlation between echocardiography and electrocardiography in the diagnosis of left ventricular hypertrophy. Further analysis is recommended for a larger group of patients.

**Keywords: left ventricular hypertrophy, echocardiography, electrocardiography**

## Seasonal variation of ST-elevation myocardial infarction during Sundays, Christmas and Easter period

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Seasonal variation with higher winter morbidity has been reported for MI. Although there is a lack of data on the occurrence of MI during different holidays.

This is a retrospective analysis of all consecutive patients admitted to 13 invasive cardiology departments between January 2011 and December 2015 with diagnosis of acute coronary syndrome. The date was based on the terms of admission of the patients to the hospital. The patients were divided into two subgroups according to the discharge diagnosis, using following codes from International Classification of Diseases, 10th Revision (ICD-10): I21.0, I21.1, I21.2, I21.3 were considered as STEMI). All admission diagnoses were confirmed with the discharge summaries and patients with MI type 4a and 5, or with other final diagnosis than MI, were excluded from the study. All data was obtained from the hospital medical database.

A total of 10 177 patients with STEMI were included to the registry. The occurrence of STEMI was significantly lower in December (by 11%;  $P < 0,05$ ) than in November and reached the lowest level during Christmas period. The incidence of STEMI increased during the springtime. We did not observe any decrease during Easter period. There was a significant decrease in incidence of STEMI on Sundays, with a reduction of 13% ( $P < 0,05$ ), in comparison to the rest of the week.

We suppose that lower incidence of STEMI during Christmas period is due to high number of free days resulting in lower sympathetic nervous system activation. In contrary to other studies we did not observe a higher incidence of MI in the coldest months.

**Keywords:** myocardial infarction, MI, ST-elevation myocardial infarction, STEMI, Seasonal variation, winter morbidity MI during different holidays

## **The assessment of the most often used electrocardiographic algorithms differentiating wide QRS complex tachycardia in patients with registered ventricular tachycardia**

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The assessment of wide QRS complex tachycardia (WCT) has ventricular or supraventricular origin remains a serious diagnostic problem. For this purpose many algorithms such as Vereckei, Brugada, Wellens or VT score are used, but none of them is characterized by satisfactory sensitivity and specificity.

The analysis of the frequency of various algorithmic parameters confirming a ventricular origin of tachycardia in ECGs with verified VT registered in patients with implanted cardioverter defibrillators (ICD).

A total of 55 ECGs with VT from 40 consecutive patients registered from 12-lead Holter ECG with implanted ICD/CRT were assessed. If the patient have > 1 VT, each of them was assessed separately. Seven basic features were evaluated: initial R wave in V1; initial r>40ms in V1, V2; S wave notch in V1; no RS complex in V1-V6; initial R wave in aVR; RWPT in lead II  $\geq$  50ms; AV dissociation. The features mentioned above are part of the newest scale VT score. Eight other features from alternative algorithms were also assessed.

VT score  $\geq$  1 was measured in 98,2% of cases, VT score  $\geq$  2 in 89,1% and VT score  $\geq$  3 in 67,3% of ECGs. The most frequently observed parameters were: RS interval in V1-V6 >100ms (72,7%); RWPT in lead II  $\geq$  50ms (67,3%); AV dissociation (60%). S wave notch in V1; S wave nadir  $\geq$  80 ms in V1/V2 and S wave notch in aVR occurred to be observed with the lowest frequency.

None of the indicators of ventricular origin of tachycardia has 100% sensitivity. Some of them seems to be questionable in differential diagnostics. We believe that WCT diagnostics based on a scoring system rather than algorithmic approach seems to be crucial.

**Keywords: ventricular tachycardia, electrocardiogram, ICD**

## Bioelectrical impedance and echocardiography as a prognostic markers in systemic sclerosis

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Systemic sclerosis (SSc) is a rare autoimmune disease of the connective tissue, including extensive fibrosis and endothelial dysfunction, which frequently leads to cardiac dysfunction. Vascular dysfunctions and fibrosis are inscribed in systemic sclerosis and can significantly affect the atherogenic process. Echocardiography is an effective method in assessing prognosis of cardiac function.

The aim of this study was to evaluate the body composition, plasma lipid concentrations and parameters of echocardiography in patients with systemic sclerosis compared to a control group, in order to identify risk factors for cardiovascular disease (CVD) in SSc.

Analyzed were 42 patients with SSc at the age of  $50.88 \pm 15.41$  years (the average time of illness was  $5.28 \pm 3.06$  years) and control group of 36 people aged  $50.60 \pm 11.19$  years who did not have CVD.

End diastolic diameters was significantly higher in SSc ( $44.54 \pm 6.08$  vs.  $40.02 \pm 5.73$ ,  $p=0.0259$ ). Visceral fat was considerable in SSc ( $8.05 \pm 2.80$  vs.  $6.53 \pm 3.13$ ,  $p=0.0467$ ) and fat mass was lower than Non-SSc ( $21.55 \pm 8.37$  vs.  $25.32 \pm 8.75$ ,  $p=0.1398$ ). Total cholesterol  $\geq 190$  mg/dl was observed higher in SSc ( $199.33 \pm 60.37$  vs.  $161.18 \pm 15.30$ ,  $p=0.0121$ ).

The risk CVD of is increased and the duration of the disease is significant in patients with SSc. SSc to be an independent risk factor for heart failure. Vascular dysfunction associated with systemic sclerosis are probably the major factor of atherogenic. Assessment of body composition and level of plasma lipid could be important indicators of metabolic disorders.

**Keywords:** body composition, cardiovascular disease, echocardiography, systemic sclerosis

## **Contribution of mild renal impairment and arterial stiffening to left ventricular concentric hypertrophy in moderate degenerative aortic stenosis**

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Degenerative aortic stenosis (AS) is a progressive disease and left ventricular (LV) hypertrophy develops gradually already in moderate AS, an antecedent of severe AS. LV remodeling and symptomatic status in moderate AS may be affected by non-valvular factors, e.g. hypertension, CAD and renal function.

To assess effects of renal function on characteristics of real-world patients with moderate AS.

We reviewed hospital records of 150 subjects with moderate AS, out of whom 70 with pure AS in sinus rhythm, with EF>40% and stable in-hospital creatinine entered the final analysis. The patients (age: 76±9 years) were compared according to GFR [ml/min per 1.73 m<sup>2</sup>]: group A (GFR>85), B (GFR=60–85) and C (GFR=15–59). We also calculated systemic arterial compliance (SAC) and valvulo-arterial impedance (Zva), an index of total LV afterload, from echocardiographic records and blood pressure,

The 3 groups did not differ in aortic valve area, EF, LV mass, prevalence of symptoms or CAD. Compared to group A, group B subjects were older (p=0.002), had lower SAC (p=0.004) and higher pulse pressure (p=0.004), relative LV wall thickness (RWT) (p=0.04) and LV mass/volume ratio (p=0.03). GFR correlated to SAC (r=0.48, p=0.002), pulse pressure (r= -0.38, p=0.02), RWT (r= -0.46, p=0.001) and Zva (r= -0.34, p=0.04) only in groups A and B.

Mild renal impairment appears associated with LV concentricity in moderate AS irrespective of valve area. This relation can be mediated by concomitant arterial stiffening that increases LV afterload. Thus, prevention of early GFR decline may possibly delay development of LV diastolic dysfunction and symptoms in AS.

**Keywords: aortic stenosis, left ventricle, concentric hypertrophy, renal function**

## **Are left ventricular parameters important in assessment and monitoring patients with end-stage lung disease referred for lung transplant?**

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Pulmonary hypertension (PH) is serious complication in end-stage lung disease (LD). The gold standard for the assessment of PH is right heart catheterization (RHC). Echocardiography provides the additional informations.

The aim of the study was to evaluate, if some basic echo- parameters describing the left ventricle are important in the assessment, and have an impact of survival in patients with end-stage LD.

65 (75% men, age 53.3 +- 9.5 years) patients with LD: 37 (57%) patients with interstitial pulmonary fibrosis (IPF), 20 (31%) with chronic obstructive pulmonary disease (COPD) and 8 (12%) with other interstitial lung disease (ILD) were included in the study. The median time of observation was 14.4 +- 5.2 months. All patients underwent examination as potential candidates for LT and also transthoracic echocardiography (TTE).

During the period, 30 (46,1%) patients died. 19 patients (29.2%) underwent LT. After adjustment for age, sex, weight, hight, pulmonary parameters and diagnosis in multivariate models only the decreased diameters of LV diameter in systole and diastole (LVEDD, LVESD) and decrease indexed LV mass influenced the survival (adjusted hazard ratio [HR] 0.34, 95% CI 0.14-0.86, p=0.022; HR, 0.33, 95% CI 0.13-0.86, p=0.023; HR, 0.92, 95% CI 0.85-0.99, p=0.023 respectively). Also the dilatation of right ventricle (RVDD) and increased diameter ratio of RV/LV (HR 2.69, 95% CI 1.22-5.96, p=0.015; HR 7.6, 95% CI 1.6-29.5, p=0.009 respectively) were associated with increased risk of death.

Left ventricular parameters are important in assessment patients with end-stage LD referred for LT and may be useful in predicting mortality.

**Keywords: pulmonary hypertension, lung transplantation, left ventricle**

## Hyperuricaemia influences in-hospital outcomes in patients with non-ST-Segment Elevation Acute Coronary Syndromes (NSTEMI-ACS)

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Emerging studies suggest, that elevated serum uric acid (sUA) can play a major role in development of coronary heart disease, and negatively influence its the outcomes. However, there is still scarce evidence whether sUA influences the prognosis in patients with non-ST-Segment Elevation Acute Coronary Syndromes (NSTEMI-ACS).

To determine the in-hospital prognosis in patients with NSTEMI-ACS depending on the uric acid concentration.

Demographic and clinical characteristics of 3166 patients hospitalised due to NSTEMI-ACS in the 3rd Department of Cardiology between 2006 and 2014 were obtained. Patients with available measurements of baseline serum uric acid (n=2096) were divided into quartiles depending on the concentration of sUA: Q1: <290  $\mu\text{mol/L}$ ; Q2: 290-352  $\mu\text{mol/L}$ ; Q3: 353—432  $\mu\text{mol/L}$ ; Q4: >432  $\mu\text{mol/L}$ . Outcomes during the hospitalisation were analysed.

Median sUA was 352  $\mu\text{mol/L}$ . Patients with increased sUA were more frequently burdened with CV risk factors. Patients with elevated sUA were at higher risk of all-cause mortality (Q1-0.4%; Q2-1.1%; Q3-2.3%; Q4-3.1%;  $p=0.0044$ ). There were significant differences in the incidence of cardiogenic shock (Q1-0.6%; Q2-1.3%; Q3-1.0%; Q4-3.8%;  $p=0.0001$ ) and pulmonary oedema (Q1-1.7%; Q2-1.5%; Q3-3.2%; Q4-8.6%;  $p<0.0001$ ). There were no significant differences in non-fatal MI or target-lesion revascularisation occurrence.

Baseline serum uric acid concentration negatively influences the in-hospital prognosis in patients with non-ST-elevated acute coronary syndromes. However, it requires further investigation to start considering sUA as an independent risk factor in NSTEMI-ACS.

**Keywords:** serum uric acid, in-hospital outcomes, NSTEMI-ACS



## **Distribution of atherosclerotic plaque burden based on coronary artery calcium score – the prevalence of coronary artery disease in left anterior descending artery**

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Calcification characteristically occurs in atherosclerosis. It can be quantified in a computed tomography exam using the Coronary Calcium Score (CCS) expressed in the Agatston score unit.

Determine if all branches of the coronary arteries are equally prone to formation of pathological changes and whether there is a particular order in which atherosclerotic plaques are formed in the analyzed segments.

64-slice computed tomography was used to assess the CCS. The analysis includes 113 patients (48 male and 65 female) with a mean age of 62.88 years and  $CCS \geq 0$ . Distribution and severity of calcification was analyzed separately for the left anterior descending artery (LAD), right coronary artery (RCA), circumflex artery (CX) and left main stem coronary artery (LM) in three groups separated according to the CCS. Group A comprised of 49 patients with  $CCS \leq 50$ , group B of 27 patients with  $CCS > 50 \leq 200$ , and group C of 37 patients with  $CCS > 200$ .

In group A single-vessel coronary disease was found in 26 (53.06%) cases, of which in 19 the LAD was affected. In groups B and C the percentage of changes in the other vessels and the LM was increased. In all groups, regardless of the severity of calcification, the CCS value was statistically significantly greater ( $p < 0.00001$ ) in the LAD than in the RCA, CX and LM.

Despite the risk factors are systemic in nature, the severity of atherosclerosis in the individual coronary arteries is not equal. The LAD is particularly predisposed in presence and severity of atherosclerosis, including patients with an early phase of the disease, followed by the RCA, CX and LM respectively.

**Keywords:** coronary arteries, coronary calcium score, atherosclerosis, computed tomography

## Atrial fibrillation modifies clinical presentation of severe aortic stenosis

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Atrial fibrillation is the most common supraventricular arrhythmia. It leads to severe heart damage and worsening of cardiovascular diseases symptoms including aortic stenosis.

The aim of the study was to assess whether and in which way atrial fibrillation modifies clinical presentation of severe aortic stenosis.

Sixty patients with severe aortic stenosis were involved into analysis: 30 patients with coexisting atrial fibrillation (AF group: paroxysmal AF: 42%, persistent: 35%, chronic: 23%) and 30 patients with sinus rhythm (S group). Using the archival data the database with information about the clinical condition, echocardiographic and laboratory parameters of the patients was created.

Patients with AF (male: 67%; mean age:  $71.4 \pm 8.7$  years) were characterized by higher CHA2S2-VASC score (AF: 3.8, S: 3.1,  $p=0.03$ ) and presented clinical symptoms more frequently as compared to the S group: dyspnea (AF: 29%, S: 10%,  $p=0.05$ ), palpitations (AF: 16%, S: 0%,  $p=0.02$ ). Severe / moderate mitral regurgitation was more frequently observed in AF group as compared with S group (AF: 39%, S: 13%,  $p=0.02$ ). Echocardiographic examination revealed the following differences between the groups: LVEF (AF: 49%, S: 55%,  $p=0.02$ ), Vmax (AF: 3.4, S: 3.9 m/sec,  $p=0.04$ ), Pmax (AF: 54, S: 66 mmHg,  $p=0.04$ ).

Atrial fibrillation affects the clinical and echocardiographic presentation of patients with severe aortic stenosis.

**Keywords:** aortic stenosis, atrial fibrillation, SIMC

## Recommendations for ICD implantation in patients with HCM – comparison of European and American guidelines

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The indications for the ICD implantation in Hypertrophic Cardiomyopathy (HCM) are different in the European and American guidelines.

To compare European and American guidelines regarding indications for ICD implantation in HCM.

Retrospective analysis involved 68 (32 males) consecutive patients (pts) with HCM treated in 1st Cardiology Department in GCM between 2009-2018. Indications for ICD implantation were estimated according to the ESC 2014, ESC 2003 and AHA 2011 guidelines. Mortality was obtained from EWUŚ records.

According to the ESC 2014 guidelines: in 5 (7.6%) pts ICD was recommended (SCD risk >6%), in 16 (23.5%) pts uncertain (SCD risk 4-6%), in 47 (69.1%) pts not recommended (SCD risk <4%). According to the ESC 2003 guidelines: in 28 (41.2%) pts ICD was recommended and in 40 (58.8%) pts ICD was not recommended. According to the AHA guidelines: none pts filled indisputable criteria for implantation, 28 (41.2%) pts had reasonable criteria, 5 (7.4%) pts uncertain and in 35 (51.5%) pts ICD was not recommended. Among the analysed group 13 pts died.

Amount of HCM pts with recommended compared to uncertain indications for ICD implantation according to European and American guidelines remains minor. Improvement of the verification process remains the priority in SCD prevention in population of pts with HCM.

**Keywords: hypertrophic cardiomyopathy, sudden cardiac death, European Guidelines, American Guidelines, comparison**

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# **SESSION OF CLINICAL ONCOLOGY**

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## The role of VEGF-A in blood serum of "gray zone" patients suspected of prostate cancer

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Prostate cancer is often detected in an advanced stage of the disease. Introducing quotients of concentrations of free and total PSA concentration (Ratio), per rectum examination and diagnostic imaging significantly have improved detection. The most difficult group of patients are with the quotient of the free to Total PSA is in the range of 10-20%. Lowering the quotient value within "grey zone" may frequently indicate an active cancer process.

The aim of the study is to assess the role of VEGF-A in "gray zone" patients suspected of prostate cancer.

16 patients with range of 10-20% were qualified for the study, in addition to 12 patients in "gray zone", despite the previous normal values and who had undergone severe urinary tract infection. Levels of TPSA, free PSA and VEGFA were marked. The Abbott commercial sets were used for the Total and free PSA markings on the Architect analyzer. VEGF-A was marked by ELISA method using RanD Systems kits. The standard values were adopted as follows: PSA: 4 mg/ml, free PSA: 0,5 mg/ml, and VEGF-A: 211,5 pg/ml.

In all 12 patients with acute urinary tract infection VEGF-A concentration was within normal limits and amounted to 186,4 pg/ml. In 13 out of 16 patients from "gray zone" suspected of developing prostate cancer the VEGF-A concentration was 312,8 pg/ml. In 11 of them prostate cancer was confirmed pathomorphologically within next 4-12 months. In the remaining 3 out of 16 subjects, concentration of VEGFA was slightly elevated,  $x=236,5$  pg/ml.

VEGF-A may be useful in detecting early neoplastic transformation in "gray zone" patients suspected of having prostate cancer.

**Keywords:** OBJ prostatic cancer, oncology, tumor markers, angiogenesis

## Relapses of acute leukemia after allogeneic hematopoietic stem cell transplantation (allo-HSCT) – single center experience

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Relapses of acute leukemia are considered to be one of the main reasons of poor allo-HSCT prognosis.

To assess the clinical outcome of patients with AML or ALL treated in a single centre.

We retrospectively evaluated the treatment results of 29 patients, chosen from a group of 976 diseased with AML or ALL that underwent an allo-HSCT in the years 2009-2013, who presented signs of extramedullary and/or marrow relapse.

The study involved 29 patients (14 male and 15 female) at median age at diagnosis (19 AML and 10 ALL) of 35 years (range, 19-55 years). The ones suffering from AML received induction therapy using following regimens: DAC (10 patients), DAF (4 patients) and DA (2 patients). Remaining patients received other treatments. The induction regimen used for all patients with ALL was the PALG ALL 5-2007. The median time between diagnosis and the allo-HSCT was 11.5 months (range, 5.5-46.6 months). Before proceeding with the transplantation 16 patients achieved CR1, 7 CR2/CR3/CR4, 7 received the allo-HSCT in non-remission status. The median time from allo-HSCT to relapse was 6.5 months (range, 1.9-27.8 months). There were 17 marrow relapses, 8 isolated extramedullary relapses and 4 in both localizations (overall: 6 in the CNS and 3 in the skin). The median overall survival (OS) was 28 months (range, 9.7-62.4 months). 7 patients were subject to a second allo-HSCT which median OS was 35.5 months (range, 24.4-62.4 months). The probability of OS at 3 years was 42%.

Relapses of acute leukemia after allo-HSCT are associated with poor prognosis. Proceeding with a second allo-HSCT in the case of relapsed patients showed an improvement in the OS.

**Keywords:** Acute lymphoblastic leukemia, Acute myeloblastic leukemia, Allogeneic hematopoietic stem cell transplantation, Marrow relapses, Isolated extramedullary relapses

## The level of knowledge about cervical cancer

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Cervical cancer is a malignant cancer that manifests itself after many years. That is why it is so important to carry out systematic cytological tests in order to be able to detect cancer at an early stage. Every woman over the age of 25 should undergo a cytological examination, while younger women should perform it up to 3 years after starting their sexual intercourse. The human papilloma virus (HPV) infection is responsible for almost all cases of this disease. Primary prevention is possible with a vaccine against the most common oncogenic types of virus.

The aim of this study was to check the level of knowledge among women about cervical cancer.

Women were asked how often they perform cytology. The study involved 50 women aged 25-50.

46% of women do this every 3 years on average, 28% less frequently than every 3 years and 10% every year. It is disturbing that 16% of the respondents have never had this test carried out. 90% of the respondents showed knowledge about the viral etiology of cervical cancer. 72% were aware of the existence of HPV vaccine as primary prevention of this cancer. Almost half of the women were convinced that there was no need for postvaccination cytology control.

Women do not have enough knowledge about cervical cancer prevention. There is a need to make women aware of the necessity of performing cytological tests.

**Keywords: HPV, Cervical cancer**



## Preoperative thrombocytosis in patients with lung cancer qualified to surgery

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Lung cancer is the most common cause of cancer-related death. Accurate and easy-to-use prognostic factors are necessary in contemporary oncology. Potentially, one of them may be increased platelets count (PLT).

The aim of the study was to investigate correlation of thrombocytosis and stage lung cancer and to assess its frequency and clinical importance.

The retrospective study of patients with non-small cell lung cancer (NSCLC) who underwent a curative-intent operation in the Department of Thoracic Surgery in Cracow. Data were obtained from medical records.

From 323 patients 285 NSCLC were selected (182 [63.86%] – males). Mean age was  $66.55 \pm 8.52$  years. We observed squamous cell carcinoma in 130 (45.61%) cases, 128 (44.91%) adenocarcinoma, 16 large cell carcinoma and 11 cases of adeno-squamous carcinoma. The frequency of preoperative thrombocytosis was assessed as 10.18% (29/285). Comparison of groups with thrombocytosis and without it showed that anaemia was significantly more frequent in the first one (65.52% vs 30.08%;  $p < 0.001$ ). No significant differences in terms of smoking and histological type of cancer were revealed. A predominant stage in patients with thrombocytosis (13 [22.41%];  $p < 0.001$ ) was III+IV, in contrast to stage of patients without thrombocytosis - I 151 (96,17%). Analysis in group of patients with NOM0 showed that in group with stage II thrombocytosis was significant more frequent than in group with stage I (3.85% vs 20.00%;  $p = 0.002$ ). Patients with N2 disease had significantly greater relative risk of thrombocytosis: 2.76;  $p < 0.001$ .

Thrombocytosis is often observed in that group of patients and significantly correlates with the higher stage of disease.

**Keywords:** cancer, genetic disease, children, therapy, paediatrics, oncology, hematology

## **Cancer among children with genetic diseases – clinical characteristic and difficulties during oncological therapy**

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Genetic disorders among children constitute a large group of many disorders present with various clinical pictures. Many studies show that patients with those disorders have predispositions to develop some kind of cancer.

Assessment of clinical features, treatment response and toxicity profiles in cancer children with genetic syndromes.

The study was based on retrospective analysis of medical records of patients with genetic disorders treated because of neoplasm in the Department of Pediatric Hematology and Oncology of Medical University of Silesia in Katowice. The analyzed group consisted of 20 children (11 girls and 9 boys) aged from 5 months and 18 years. The mean age at diagnosis of neoplasm was 8,5 years.

Analyzed patients demonstrated different hereditary conditions: neurofibromatosis type 1 (n=10), neurofibromatosis type 2 (n=1), trisomy 21 (n=6), Nijmegen Breakage Syndrome (n=2) and Beckwith-Wiedemann Syndrome (n=1). The most common cancers among children with neurofibromatosis were brain tumors, especially gliomas whereas children with Down syndrome mainly suffered from leukemia. Complications during oncological therapy in children with genetic diseases occur frequently. Those patients experience higher levels of treatment-related toxicity, such as mucositis or infections and also inferior event-free survival rates as compared with children without such genetic defects.

Physicians and especially clinical geneticists should be aware of the existence of genetic syndromes and their high risk of developing tumors.

**Keywords: cancer, genetic disease, children, therapy, paediatrics, oncology, hematology**

## Knowledge about testicular cancer among first-year economy students

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Testicular cancer remains the most commonly occurring cancer in young men aged between 20 and 44 (25% of all cancers in this age group) and recent studies suggest an increase throughout the western countries. Testicular cancer is highly treatable if is diagnosed early. In Poland, in 2010 almost 1,100 cases of testicular cancer were recorded.

The main goal of presented study was to evaluate the level of knowledge on prevention, risk factors, symptoms and screening for testicular cancer among economy students.

The study was conducted in a group of 250 first-year economy students.

The 60 % of respondents were women. There were no significant differences between sex about knowledge on testicular cancer. 79% of the respondents indicated the genetic factors as a risk factors. 56% of participants heard about testicular self-examination and only 16 % of male students conducted themselves this examination.

The obtained result show, that the majority of the respondents were misinformed about the risks, symptoms and screening of testicular cancer. The findings indicate the need for a informing young people about testicular cancer in order to improve diagnosis of this cancer.

**Keywords: testicular cancer, students, knowledge**

## **MPVLR as a risk factor for death in patients with ccRCC**

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With each passing year, the number of diagnosed kidney tumors increases, what makes it highly desirable to search for new pre-operative markers that will effectively assess the course of the disease, and help determine the risk of death in long-term follow-up.

The aim of our study was to assess the prognostic value of a new hematological index - MPVLR (ratio of MPV values to lymphocyte numbers) in patients undergoing nephrectomy for clear cell renal cell carcinoma (ccRCC).

The retrospective analysis of patients treated for ccRCC in 2003-2010 at the urology clinic in Zabrze. Patients were divided into two groups: high and low pre-operative MPVLR indicator.

Patients with MPVLR who reached a higher level were older and had worse TNM prognosis than people with lower rates. Mortality in patients with high MPVLR was significantly higher than in patients with low MPVLR. In multivariate analysis, high MPVLR was an independent risk factor for death in long-term follow-up in patients with ccRCC.

MPVLR can significantly influence the treatment strategy used in ccRCC patients as well as oversurvival. Moreover, it can be calculated without any financial outlay.

**Keywords:: MPVLR, ccRCC,**

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INTERNATIONAL MEDICAL CONGRESS OF SILESIA

# **SESSION OF DERMATOLOGY, ALLERGOLOGY AND INFECTIOUS DISEASES**

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## **The frequency of the contact sensitization on the selected plant ingredients in patients with eczema, and the analysis of the prevalence of these ingredients in beauty and sanitary products available on the market**

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Ingredients of beauty and sanitary products are one of the most common causes of the contact sensitization. Recently, there has been an increased spread of the plant ingredients in such products

The aims of the projects were to assess frequency of the contact sensitization on the selected plant ingredients in patients with eczema, and to analyse the spread of these ingredients in beauty and sanitary products available on the market.

We did a study with the participation of the experimental group (n=181, average age=48) and the control group (n=42, average age=42). The European Standard Allergens Set was used to conduct the patch test. Additionally, the patch test was conducted for plant allergens such as *Oleum olivae*, *Arnica montana*, *Oleum Menthae piperitae*, *Taraxacum officinale*, *Matricaria chamomilla*, *Melaleuca alternifolia*. 2891 beauty and sanitary products from 13 categories were analyzed for the presence of the aforementioned plant ingredients. All the products were available on market in February 2018 in one of the biggest drugstores on the Polish market.

There were no positive reactions on plant allergens in patients in the experimental group and the control group. Among the analyzed beauty and sanitary products, the most common plant ingredient was chamomile (6.16%) and the least common was dandelion (0%). Chamomile was most frequently used in child care products (14.17%) and shaving products (13.79%).

Many beauty and sanitary products contain plant ingredients. It seems that they do not cause positive reactions and do not aggravate the symptoms in patients with eczema despite the wide prevalence and probable allergic potential of these products.

**Keywords: eczema, plant ingredients, cosmetics, beauty and sanitary products, patch testing**

## **Risk factors and changes in quality of life in chronic hepatitis C patients who underwent interferone-free therapy in Southern Poland**

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The aim of study was to evaluate risk factors, quality of life and prevalence of depression in chronic hepatitis C (CHC) patients undergoing anti-HCV therapy with direct acting antivirals (DAA) in single center in Silesia, Poland.

57 patients with CHC (27 female, 30 male, median age 55, 24-81) were included in the study, 31 subjects in the follow-up (still pending). Risk factors were assessed by a self-reporting questionnaire, quality of life (QoL) by SF-20 and depression by HADS.

Among 57 patients with CHC the most prevalent risk factor was history of hospitalization (53/ 93%). Small dental procedures were reported by 26/46%. Importantly significant decrease of QoL in at least one established domain was noted in 27/48% of subjects. Among the most pronounced aspects was decreased health perception (36% of subjects). Furthermore, depression was noted in 10/16% of patients.

In the follow-up group of subjects the overall QoL – perception of health did not change significantly compared to baseline (54% vs 52% of reference value,  $P=0.71$ ). One of the most affected factor was self-reported mental health (72% vs 63%,  $P=0.06$ ). Importantly, percentage of patients with depression scale decreased significantly after successful anti-HCV therapy (7% vs 29%,  $P<0.05$ ).

The leading route of HCV infection in Polish patients currently undergoing anti-HCV therapy seems to be nosocomial. Decreased QoL and depression is present in a significant number of HCV-infected. However, successful anti-HCV therapy 6 months later significantly improved self-reported mental health, but also reduced the prevalence of depression almost 3-fold.

**Keywords: chronic hepatitis C, risk factors, interferone-free therapy, quality of life**



## **Dynamic thermographic analysis of the skin during IPL erythema therapy**

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Erythema is common skin problem. Many exogenic and endogenic factors have influence to the formation of erythematous changes. It often affects areas that are regularly exposed to the sun. Intense pulsed light (IPL) is increasingly used for treatment of erythema

The aim of the study was to measure the temperature distribution changes on face in response to IPL treatment.

Ten participants with facial erythema were subjected to IPL reducing redness treatment. Thermographic images were recorded 5 min before, during and 5 min after IPL treatment. All temperature registrations were performed in the same room and under the same conditions. The treatment device was IPL 515–1200 nm Lumecca Inmode MD. That intense pulsed light device delivers up to 3X more energy in the 500-600 nm range. Thermal imaging camera FLIR T420 was used to assess facial temperature distribution. Temperature measurements on selected ROI before, during and after the procedure were identified and compared with each other.

The results showed that skin temperature after sessions of IPL increased.

Thermal imaging camera is a useful tool in analyzing the course of IPL treatments. It allows the registration of thermograms of the temperature distribution on the surface of the skin undergoing treatment.

**Keywords: Erythema, IPL, thermography**

## **The impact of diet and lifestyle of rosacea**

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Rosacea is a chronic, inflammatory skin disorder. It appears more commonly among women in North Europe and North America. There are several major subtypes of this disease which can be categorised into papulopustular, erythematotelangiectatic, ocular and phymatous rosacea. Even though the etiology of the disease is complex and unknown, several factors may play a crucial role in its development, such as vascular and digestive dysfunction.

The aim of the study is to analyze environmental factors and their impact on skin condition of patients with rosacea.

Confidential questionnaire surveys of 48 patients were analyzed (42 women and 6 men). In questionnaire, factors such as diet, lifestyle, physical activities, usage of medications and dermo-cosmetics were included. In addition, the duration of rosacea and comorbidities analyzed.

The most prevalent symptoms are pustules and papules (72.9%) and burning and hot sensation (56.3%). Most of patients noticed worsening of the symptoms after stressful situations (80.4%) and after UV light exposure (74.4%). Worsening of symptoms are also observed after consuming alcohol (27.68%) and chocolate (52.9%).

Our study presents that dietary factor, life-style and environmental factors play significant role of the development of rosacea symptoms.

**Keywords: Rosacea, diet, lifestyle**

## The level of knowledge about toxoplasmosis among women

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Toxoplasmosis is caused by the intracellular protozoan *Toxoplasma gondii*. This disease in pregnant women is often asymptomatic or its only symptom is lymphadenopathy. The consequences for the foetus are much more serious. In rare cases, it leads to the characteristic symptoms called Sabina Pinkerton's triad. This includes hydrocephalus, retinitis and vascular inflammation, and intracerebral calcifications. It is very important for women who are planning to become pregnant to be aware of the risks associated with this disease, situations favouring infection and how they can be protected from it. A scientific study was carried out using a questionnaire containing 12 closed questions on the knowledge of toxoplasmosis.

**Aim:** To demonstrate the knowledge of young women about toxoplasmosis.

A total of 79 women aged 22-35 were included in the survey.

Of the respondents, 65.8% were able to indicate that protozoan infection is responsible for the disease. According to the respondents, the most common situation where infection occurs is contact with cats, 72.2% responded. The correct answer was chosen by 14 pregnant women. Despite the wide availability of serological tests to determine the presence of *T. gondii* antibodies, they are not widely performed. Only one in three women did this examination before their planned pregnancy. A correlation was observed between the correct number of responses and the level of education and place of residence. Women with higher education and living in large cities have shown much greater knowledge.

Research has shown that women do not know enough about toxoplasmosis. It is very important to promote awareness of this disease.

**Keywords:** toxoplasmosis, *Toxoplasma gondii*

## The state of knowledge of students of non-medical fields about rubella virus

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Pregnancy is a very important period in the life of every woman. It is a good idea to prepare yourself for it, because many pathogens can endanger your baby before he or she is born. This can be prevented by doing non-invasive checkups before pregnancy. Rubella virus is particularly dangerous because there is no specific treatment. Therefore, prevention, both primary and secondary, plays an important role here. In Poland, since 2003, both boys and girls have been included in a two-dose vaccination programme. The number of first pregnancies at an older age has risen in recent years, so it is uncertain whether women have been vaccinated against rubella. This can easily be checked using non-invasive serological tests prior to pregnancy.

The aim of this study was to check the level of knowledge among students of non-medical fields about rubella virus.

Students were asked about rubella virus in anonymous questionnaire. The study involved 48 women aged 20-27.

100% of women knew that rubella virus is dangerous in pregnancy. 81% showed knowledge about existence of rubella vaccine. Only half of the women knew if they were vaccinated in the past. A lot of responders had problems with the question about transmission of this virus.

Students of non-medical fields do not have enough knowledge about rubella virus. There is a need to inform women about this virus.

**Keywords: rubella virus, pregnancy**

## **Insulin resistance, hiperinsulinemia and acne**

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Acne is one of the most common skin disorders. It is also a cardinal component of many systemic diseases or syndromes, such as polycystic ovary syndrome (PCOS).

The aim of our study was to investigate the associations between insulin resistance, hiperinsulinemia and acne in women without hiperandrogenemia and other hormonal disorders, as well as in women with PCOS with and without acne.

Retrospective research included 1110 women aged 18-35, BMI 18,5-25, who were admitted to the Gynaecological-Endocrinology Unit between 2014 and 2017. They were divided into 4 groups: 1- 360 controls (healthy women without acne), 2- 39 women with acne without hiperandrogenemia and other hormonal disorders, 3- 177 women with PCOS with acne and 4- 534 women with PCOS without acne. We analyzed levels of glucose 0', insulin in 0',30',60',120' of glucose tolerance test, HOMA-IR, QUICKI, glucose/insulin index and other laboratory tests. Acne Global Severity Scale was used to assess the grading of acne. Statistical analysis was performed using Statistica12.0.

In our study, we observed statistically significant difference in the insulin 30' level between controls and women with acne without hormonal disorders ( $p=0,0009$ ). Similar differences were noted in insulin 30' and 120' level between control group and PCOS women with acne ( $p<0,005$ ). Additionally, PCOS with acne group differed statistically significant from the PCOS without acne group in terms of insulin 120' level ( $p=0,0012$ ).

The study showed that hiperinsulinemia is associated with the higher frequency of acne in women without hormonal disorders, as well as in women with PCOS.

**Keywords: PCOS, acne, insulin resistance, hiperinsulinemia**

## **Genotypic characteristic of the *Clostridium difficile* strains isolated from the hospitalized patients**

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*Clostridium difficile* is a spore-forming Gram-positive bacillus, one of the main causative agents of infections. CDIs (*Clostridium Difficile* Infection) constitute 30-50% of all antibiotic-associated diarrheas (AAD). Toxins A and B are the main virulence factors causing diarrhea.

The aim of this study was to evaluate the relationship between the presence of genes encoding toxins A (*tcdA*), B (*tcdB*) and binary toxin (*ctdA*, *ctdB*) of the *C. difficile* strains isolated from the clinical material obtained from hospitalized patients and the occurrence of AAD symptoms.

The study involved 30 strains of *C. difficile* isolated from clinical materials. After defrosting, the strains were cultured on Columbia Agar with 5% blood at 37°C for 48 hours under anaerobic conditions (Withley anaerobic A35 workstation, UK). DNA was isolated using GeneMATRIX Bacterial & Yeast Genomic Purification Kit. Thereafter, multiplex PCR (mPCR) was used, utilizing primers for individual genes (16S-rDNA – 1062 bp, *tcdA* – 629 bp, *tcdB* – 410 bp, *gluD* – 158 bp, *cdtA* – 375 bp, *cdtB* – 510 bp). The results were visualized using gel electrophoresis on 2% agarose gel (G:BOX, Syngene).

Among 30 strains tested, all of them possessed the *gluD* gene. 29 (97%) showed the presence of toxin A gene, 22 (73%) - toxin B gene. Twenty-two (73%) strains showed the presence of a binary toxin gene, however only in strains positive for both toxin A (*tcdA*) and toxin B (*tcdB*) genes.

All of the studied strains contained the *gluD* gene, which confirmed the presence of *C. difficile* in the examined samples. The presence of *tcdA*, *tcdB* and *ctdA/B* genes was positively correlated with the severity of diarrhea among hospitalized patients.

**Keywords: *Clostridium Difficile*, Toxin A, Toxin B, binary toxin**

## **Influence of BMI on severity of acne lesions**

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Acne tends to be chronic, refractory to treatment and associated with psychosocial problems and depressive disorders. So far scientific literature has reported that higher BMI is a risk factor for more severe acne.

The aim of this study was to investigate the influence of BMI on the severity of acne lesions in men and women between 17 and 31 years of age.

1695 women and 484 men between 17 and 31 years of age with varied intensification of acne lesions were enrolled in this study. The data was collected through anonymous online questionnaire. The participants were shown 12 photos from The Leeds Revised Acne Grading System, picturing different degrees of acne severity on the face. The participants were supposed to choose one photo picturing current condition of their complexion.

Spearman's rank correlation coefficient revealed that BMI is negatively correlated with the severity of acne lesions in women at the age exceeding 18 years old ( $R = -0,066$ ;  $p = 0,0101$ ). On the other hand, Kendall's rank correlation coefficient proved that among women at the age of 17 the correlation is positive ( $T = 0,101$ ;  $p = 0,0327$ ). In men we did not notice any statistically significant connection between BMI, age and severity of the acne lesions.

Initial findings indicate that higher BMI is protective factor against acne in mature women. On the other hand, in women younger than 18, higher BMI is a significant risk factor for more severe acne lesions.

**Keywords: BMI, acne, risk factor**

## The influence of the diet on psoriasis

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Psoriasis is an inflammatory chronic disease, which affects 1-3% of population. Patients show big interest in the role of diet in their condition of the skin. However, there is a lack of data describing diet interventions in patients with psoriasis and related results.

The aim of the study was to determine the relationship between the elimination pro-inflammatory products and the regression of psoriatic lesions. Other conditions affecting the patient were taken into consideration such as autoimmune diseases and applying the right diet.

The study was based on the questionnaire containing 54 questions, divided into three parts: demographic data, information about the disease and diet. Patients wrote about nutritional habits, their modifications and skin reactions to the introduction or elimination of individual products.

Author's questionnaire was carried out obtaining 112 answers.

The study showed that only 32% respondents control their diet. About 65,5% attempted an elimination of some products. The biggest influence of the skin condition had elimination of sweet, processed foods and alcohol.

Body Mass Index together with increased of the amount of adipocytes contribute to chronic inflammation in the body. Pro-inflammatory cytokines are involved in the development of insulin resistance, dyslipidemia, diabetes and as a consequence of cardiovascular diseases. Their increased amount also leads to increased epidermal proliferation process, a significant shortening of the duration of the cell cycle, which results in exacerbation of psoriatic lesions.

**Keywords: psoriasis, diet, skin condition, obesity**



## The effect of skin disinfecting preparations on the pH of the epidermis

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The stratum corneum is physicochemical barrier which has very important role to protect the skin against external factors. It is linked to the construction of the epidermis, physiological upper layers exfoliation, the acidic pH and the lipid mantle. Hand disinfection is important part of medical work, but preparations have different chemical substances which may change skin pH and cause damage of the epidermal barrier. Hand skin pH alkalization may cause irritation, dryness and make environment for infections growth.

The aim of study was quantitative evaluation of effect three disinfecting preparations on pH of the hands skin epidermis and compare them.

36 healthy volunteers were divided into three groups of twelve. The first group used Octenisept to hygienic hand disinfection, the second used Skinsept Pur and the last group used Desderman Pure Liquid. Skin-pH-meter glass electrode was used for the measurement of skin pH which was done at three points on two hands: the dorsal, palmar side of the hand and the inner part of the middle finger in three points time: before, 30 and 60 minutes after application.

Octenisept and Skinsept Pur do not cause significantly changes in hands skin pH value but Desderman Pure Liquid causes the skin pH to slightly decrease of 4,11%.

Skin disinfecting preparations do not significantly affect the pH of the stratum corneum so they do not damage the epidermis hydrolipid barrier.

**Keywords: skin pH, disinfection, antiseptics, disinfecting preparation**

## **Why do they come back? A retrospective analysis of 2013-2016 syphilis patients medical history at Department of Dermatology, Venerology and Allergology Medical University of Gdańsk**

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Syphilis is not infrequently considered a disease from the past but its prevalence is still very high in certain populations.

The aim of this study was a retrospective analysis of the diagnostic process of patients with syphilis treated in our clinic.

Our analysis focused on cases of syphilis that have been hospitalized in Department of Dermatology, Venerology and Allergology at Medical University of Gdańsk in 2013-2016. Gathered material concerned 84 patients hospitalized in a given timeframe.

85% of hospitalized syphilis patients were men and 15% were women. Average age of the patient was 32 years. In 20% of the cases the referral to dermatology ward was written by doctors of specialties other than dermatology. The cause of referral were: in 36% syphilis of skin and mucosa, in 13% secondary syphilis and in 11% latent syphilis. 40% of the patients have been hospitalized due to syphilis more than once.

Education of doctors of specialties other than dermatology plays an important role in the diagnostic process and should be reinforced, knowledge of early symptoms of syphilis included. Provision of education for patients hospitalized due to syphilis is crucial as well.

**Keywords: syphilis, dermatology, venerology, STDs**

## **Prevalence of macrolide-lincosamide-streptogramin B and fluoroquinolon resistance in Streptococcus group B strains isolated from patients in different age groups**

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Streptococcus group B (GBS) can cause serious infection, especially in newborns. Recent data showed that in Poland within the 30 day post-partum period the most commonly used antimicrobials were  $\beta$ -lactams, macrolides, lincosamides and fluoroquinolones. Not only pregnant women but also the elderly and immunocompromised people are included in group of risk for GBS infections. In contrast, studies of elderly patients infected with GBS strains are rare.

The purpose of our study was to analyze the susceptibility of GBS strains isolated from two age groups of patients to erythromycin and clindamycin (MLSB mechanism of resistance) and levofloxacin and moxifloxacin. First group of patients included woman in reproductive age and second group – patients older than 65 years.

Materials were collected from vagina and rectum of pregnant women and from blood, urine, vagina and wounds, respectively. 73 GBS strains were isolated: 24 strains from pregnant women and 49 strains from patients older than 65 years. The bacterial strains were identified as GBS based on positive CAMP-test and serological criteria (Slidex Strepto-Kit bioMèrieux, L'Etoile France) and susceptibility testing were performed according to EUCAST recommendation.

MLSB-resistance mechanism was found more frequent in GBS strains isolated from pregnant women than in patients older than 65 years (37.5% and 16% respectively). However there was no significant difference in frequency of MLSB-resistant GBS strains isolated from blood, urine, vaginal and wound swabs from ambulatory and hospitalized patients older than 65 years.

No strains resistant to levofloxacin and moxifloxacin have been found in studied strains.

**Keywords: MLSB, GBS, macrolides, lincosamides, streptogramin B, elderly people, pregnant women, antibiotics resistance**

## Reduction of acne scars on the face using acid peels and lasers

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Acne scars are one of the most common esthetics problems of the skin. They can be found at any age. Patients often undergo removal procedure in order to improving the quality of life and self-esteem, so the effectiveness of treatments is very important.

This study aims to indicate which treatments- acids peels which consists of: fruit, salicylic and trichloroacetic acids or fractional laser, are more popular. We also compared satisfaction after both procedures.

61 patients had acne scars however only 54 people (45 women and 9 men) had undergone the treatments: chemical peels, lasers or both. To assess patients' satisfactions was used five-point scale and also state of change, time from appearance, frequency and quantity of performed procedures.

From 54 subjects, 66,7% patients had chemical peels, 18,5% had lasers while 14,8% people undergone both. -In each case scars were older than six months -Most of the respondents 59% (32) were below 25 years of age, -81,8% people who had acids peels observed improvement, while 88,8% patients after laser treatments noticed progression in acne scars reduction.

Our study shows that chemical peels are more common although lasers treatments are much less rewarding, which may evidence greater efficiency.

**Keywords: chemical peels, lasers treatments, acne scars**

## Malignant melanoma - the analysis of dermoscopy images of skin

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The malignant melanoma is a skin cancer derived from melanocytes. It accounts for about 2% of all cancers cases. One of the most important diagnostic methods used in the prevention of malignant melanoma is dermoscopy

The aim of this study was the analysis of dermoscopic features in patients with skin malignant melanoma. Methods A total of 32 patients (18 females, 14 males), at mean age of  $53 \pm 18$  years, were enrolled in this study.

The retrospective analysis was performed on collected skin malignant melanoma dermoscopy images of patients consulted in the Clinic of Skin and Venereal Diseases in Szczecin. Statistical analysis was performed using  $\chi^2$  test.

The lesions were most frequently localized within the patient's back (47%) and less frequently within the lower (16%) and upper limb (13%). The most frequent dermoscopic features of malignancy were: asymmetry (85%), atypical pigmented network (66%), peripheral black dots/globules (50%), blue-white veil (50%). Thin melanoma lesions ( $\leq 1$ mm) were observed in 90% of cases (in situ 42%) and intermediate melanoma lesions (1-4mm) were found in 10% of cases. The mitotic rate was 1/mm<sup>2</sup> in 6% and 4/mm<sup>2</sup> in 3% of cases. There was no statistically significant correlation between the histological lesions thickness and presence of dermoscopic features ( $p > 0,05$ ).

This study confirms the effectiveness of dermoscopy in detection of early stage melanomas, in thickness  $\leq 1$ mm, with a high total cure rate. The lack of statistically significant correlation between the histological lesions thickness and presence of dermoscopic features may be caused by small number of cases enrolled in the study. Hence, further study on larger case group is require

**Keywords:** dermatology, dermoscopy, skin cancer, cancer, malignant melanoma

## The risk of human exposure to *Anaplasma phagocytophilum* and *Rickettsia helvetica* in the selected recreational areas of the Tarnogórski district

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*Ixodes ricinus* [IR] is the main vector of *Anaplasma phagocytophilum* [AP] and *Rickettsia helvetica* [RH], which are etiological agents of human granulocytic anaplasmosis and rickettsiosis, respectively. The contact of humans with infected IR ticks is often related with the possibility of infection with AP or RH.

The aim of the study. Assessment the risk of exposure to tick-borne infections with AP and RH on the selected recreational areas of the Tarnogórski district.

The DNA was isolated from 48 IR ticks by the ammonia method. Ticks were collected on recreational areas of Repty and Niezdara. Pathogens were detected by the PCR method. To detect of AP a pair of primers specific to the 16S rRNA gene was used, whereas to detect of RH a pair of primers specific to the *gltA* gene was used. The amplification products were separated electrophoretically in 2% ethidium bromide stained agarose gels and then visualized in the ultra violet light. The presence of products of size 274 base pairs [bp] for AP and 381 bp for RH were considered as positive.

The pathogens in 6/48 (12.5%) of the studied ticks were detected, including AP in 2/48 (4.2%) ticks and RH in 4/48 (8.3%) ticks. RH was stated in ticks from both studied areas while AP was found only in ticks from Niezdara. RH was isolated from all studied developmental stages of IR, whereas AP was found only in 1 nymph and 1 male of IR.

The obtained results showed the low risk of exposure of human to tick borne infection with AP and RH on the studied areas.

**Keywords:** *Anaplasma phagocytophilum*, *Rickettsia helvetica*, *Ixodes ricinus*, Tarnogórski district, ticks, pathogens

## The Internet era in dermatology

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The Internet has a great influence on contemporary medicine. It is still unsure how it exactly affects doctor-patient cooperation, especially in the field of dermatology.

The aim is to show the overall number of dermatological patients influenced by the Internet, to compare the differences in diagnosis and treatment between the doctors' and these suggested from the Internet users. Also to assess how many people take into account other's opinion while choosing a dermatologist and to conclude if the Internet provides a reliable source of knowledge in the field of dermatology.

A cross-sectional study was conducted among 314 volunteers with dermatological diseases. The questionnaire was filled in via the Internet, in the Department of Dermatology, Venerology and Allergology of Medical University of Gdansk and in a private clinic (Derm-al). The data were statistically analyzed using Google Forms and Microsoft Excel.

71% of respondents try to diagnose their dermatological problems by themselves before going to the specialist, regardless of the fact that only 29% of them think it is a reliable source of medical knowledge. 62% of patients are encouraged to visit a doctor after searching information about their condition. Mostly (59%) the internet diagnosis coincides with the doctors' opinion. Doctors' treatment is fully compatible only in 25% with this suggested on the Internet. 18% modify professional treatment after reading articles on the Internet. >50% of patients checked the Internet opinions before choosing a doctor.

The doctors' cognizance of patient's proceeding is important to improve compliance, prevent modifications of the treatment and to reduce stress caused by the information taken from untested origins.

**Keywords: Internet, dermatology, compliance**

## **Analysis of Mortality from Intestinal Infectious Diseases in Ukraine during the period 1990-2013**

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**Background** The rate of mortality from Intestinal Infectious Diseases (IID) in Ukraine is relatively high compared with other European countries, and yet low compared to the world - 0.3 per 100,000 people.

To research and compare: • mortality rates from different IID; • progress in mortality during 1990 - 2013.

Meta-analysis was used to analyze statistical data over a period of 23 years. Data was collected from the Global Burden of Disease Study presented by the Institute of Health Metrics and Evaluation (University of Washington, Seattle).

The annual mortality rate per 100,000 people from IID in Ukraine has decreased over the last 23 years by 25.5% and stands today on 0.3. Yet, in Eastern Europe, Ukraine is on the 2nd place of mortality rate (after Moldova) but relatively to the world (which rate has reduced from 4.9 in 1990 to 3.1 per 100,000 people in 2013) Ukraine's rate is low. Harm caused by unsafe water and bad sanitation, had maximum level at the age of 1-4 (0.5 per 100,000) and over 80 (0.4 per 100,000 people). In 2013, 1st place in mortality rate was shown for typhoid fever, the 2nd - for paratyphoid fever and all the rest of the sicknesses were defined as 3rd place.

In order to decrease level of mortality from IID in Ukraine, recommendations are: timely detection of typhoid and paratyphoid fever, anti-epidemic actions in foci of infection, and enhance knowledge of hygiene among the population.

**Keywords: Intestinal Infectious Diseases, Mortality, Typhoid Fever, Paratyphoid Fever**



## Complex treatment of recurrent genital herpes and herpes zoster by using alloferon

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Introduction. Herpesviral infections (HVI) may cause inapparent latent, acute, chronic recurrent and slack forms of infection. The emergence of resistant strains to basic therapy is a serious problem and can directly affect on the course of the disease. It forces to find new methods of complex treatment of recurrent herpetic infections (RHI).

To discover the effectiveness of "Alloferon" in complex treatment of patients with recurrent Genital Herpes (GH) and Herpes Zoster (HZ).

We examined 64 patients with RHI (22-GH and 42-HZ). All people were divided into 2 groups. First group (G1)-34 (12-GH and 22-HZ) took basic therapy (daily receiving of Valacyclovir by 1,0 g inside 2 times per day during 7-10 days) and 3 subcutan. inject. of "Alloferon" by 1 mg through one day. Second group (G2)-30 patients (10-GH and 20-HZ) took basic therapy during one week. Effectiveness was valuated with standards: «positive»-significant decrease of symptoms; «satisfactory»-certain decrease of symptoms; «no effect»-absence of symptoms dynamic; «negative»-negative symptoms dynamic.

Therapy with using "Alloferon" shows «positive» effect in 70,0% of patients with GH and 52,6 %- with HZ; «satisfactory» effect in 18,2-36,8% of patients; 9,1-10,5% have not any clinical effect. Basic treatment by Valacyclovir shows «positive» effect in 19,0-41,7%, «satisfactory»- in 36,4-42,9%, «no effect»-in 16,7-23,8%, «negative»- in 9,1% of patients with GH and 14,3%-with HZ.

This confirms, that supplement of basic treatment of GH and HZ by 3 subcutan. inject. Of "Alloferon" by 1 mg through one day makes clinical manifestations more shorter, reduce recurrence frequency and make shorter recurrence lasting

**Keywords:** Herpes Zoster, Genital Herpes, "Alloferon"



**JOURNEY  
THROUGH  
MEDICINE**  
APRIL 25-26 th 2018

**INTERNATIONAL MEDICAL CONGRESS OF SILESIA**

# **SESSION OF DIETETICS AND NUTRITION**

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## **Evaluation of the relationship between vitamin D concentration and glycemia in students of the university of the third age**

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Vitamin D deficit and type 2 diabetes mellitus reach pandemic size. Many researches indicate improvement glycemia parameters in people with type 2 diabetes mellitus who supplement vitamin D preparations. Taking vitamin D and calcium contribute to reduction the risk of type 2 diabetes mellitus about 33%.

The aim of this study was to evaluate a connection between vitamin D concentration and fasting glucose concentration and HbA1c in students of university of the third age.

In research took part 60 students of university of the third age in Bytom, it held in 2017 (november/december). In research, 25(OH)D3, fasting glucose and HbA1c were estimated from blood serum, taked on an empty stomach. Subjects were divided into 6 groups in terms of concentration of 25(OH)D3 in blood serum: deficit, suboptimal concentration, optimal concentration, high concentration, potentially toxic concentration, toxic concentration. Consent to research of SUM bioethics committee was obtained.

The highest percentage (76,9%) of subjects with correct fasting glucose was observed in group of optimal vitamin D concentration, for groups with deficit and suboptimal concentration, were – 60% and 31,3%. People with suspicion of diabetes mellitus were in group of students with deficit of vitamin D3 (13,3%). Impaired fasting glucose was recorded most frequently in group of suboptimal vitamin D concentration (56,3%). Regardless of group, HbA1c was within the established norm.

Correct fasting glucose was the most common in people with optimal vitamin D concentration. Diabetes mellitus was suspect among people with deficit of this vitamin. There was no connection between vitamin D concentration and HbA1c.

**Keywords: vitamin D3, fasting glucose, glycated hemoglobin, elderly**

## **Evaluation of relationship between vitamin D3 concentration and the selected biochemical blood parameters and nutritional status in students of university of the third age**

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Vit. D concentration in organism decreases with age. There are many causes of deficit this vitamin, including decreased skin synthesis of 7-dehydrocholesterol, low exposure to UV, polypragmasy, interactions with certain drugs, eating habits and limits linked with them and malnutrition.

The aim of study was to assess a link between concentration of vit. D and selected biochemical blood parameters - total cholesterol concentration, BMI, arm and calf circumference and nutritional status in students of university of the third age.

Research was conducted among 60 students of university of the third age in Bytom in november and december 2017, included indications of biochemical parameters in blood serum, taked on an empty stomach and anthropometric measurements (height, weight) and nutritional assessment, using MNA form. Consent to research of SUM bioethics committee was obtained.

Among subjects with vit. D deficit, suboptimal and optimal concentration, fractions of people with correct body weight, were: 16,7%; 25%; 30,8%. Percentages of subjects in danger of malnutrition (MAC), were: for deficit – 10%, suboptmal concentration – 6,3%, optimal – 23,1% and proportion of people with with correct nutritional status (MNA), were: for deficit – 90%, suboptmal concentration – 87,5%, optimal – 84,6%. Vit. D concentration showed visible dependence with total cholesterol concentration ( $\gamma=0,35$ ), frequences were: deficit - 73,3%; suboptimal concentration - 81,3%; optimal - 46,2%.

Higher vit. D concentrations were observed among subjects with correct body weight. With the increase of the level of vit. D concentration among subjects, reduction of total cholesterol was founded.

**Keywords: vitamin D3, nutritional status, MNA, elderly**

## **Nutritional status and biochemical parameters assessment in women with Congenital Adrenal Hyperplasia (CAH)**

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Congenital adrenal hyperplasia is one of the most common autosomal recessive hereditary disorders that features the lack of cortisol synthesis which leads to excessive stimulation of the adrenal glands by adrenocorticotrophic hormone (ACTH) and excessive androgen synthesis. The clinical manifestations of congenital adrenal hyperplasia in adults result from adrenocortical insufficiency, hyperandrogenism, and the adverse effects of glucocorticosteroids used to treat this disease. Patients with congenital adrenal hyperplasia experience a wide variety of symptoms including obesity, hyperinsulinemia, and insulin resistance which contributes to the development of metabolic syndrome.

The study aimed to compare nutritional status and biochemical parameters in women with CAH with nutritional status and biochemical parameters in healthy women.

The study included 20 women aged 18-40 years with congenital adrenal hyperplasia and 20 healthy controls. All participants had nutritional status and laboratory assessment, and hormonal panel performed.

Study results indicate that patients with CAH have a higher level of body mass index (BMI) than healthy women. Moreover, patients with CAH have a higher level of insulin and lower level of glucose in comparison to the control group.

Author found that nutritional status and biochemical parameters in patients with CAH are highly correlated with the levels of specific androgens

**Keywords: Congenital Adrenal Hyperplasia (CAH), nutritional status, BMI**

## **Nutritional status and biochemical parameters assessment in women with Polycystic Ovary Syndrome (PCOS)**

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Polycystic ovary syndrome is one of the most common disorders found in patients of gynecological endocrinology, in which patients suffer from excessive secretion of androgens resulting in masculinization, defeminization, and metabolic disorders.

The study aimed to compare nutritional status and biochemical parameters in women with PCOS with nutritional status and biochemical parameters in healthy women.

The study included 56 women aged 18-40 years with polycystic ovary syndrome and 20 healthy controls. All participants had nutritional status, laboratory assessment, and hormone profile performed.

Study results indicate that patients with PCOS have a higher level of body mass index (BMI) than healthy women. It has also been assessed that patients with PCOS have a higher level of insulin and lower level of blood glucose in comparison to the control group.

Author found that nutritional status and biochemical parameters in patients with PCOS are highly correlated with the levels of specific androgens.

**Keywords: Polycystic Ovary Syndrome (PCOS), BMI, nutritional status**

## Obsessive approach towards proper diet among polish students

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From about two decades there is a new trend in proper diet that is called orthorexia nervosa. However, it is not classified in the ICD-10, it could be dangerous to mental health as it is related to pathological obsession with quality of food and drinks.

The aim of the study was the evaluation of eating habits and lifestyle within the polish students population and estimation whether orthorexia occurs among them.

3743 students from 45 polish universities participated in the research. They were asked to fill in the authorial and validated questionnaire 'ORTO - 15' by Donini. The original survey consisted of 24 questions, while 'ORTO - 15' included 15 questions both pertaining to eating habits.

The biggest amount of points collected in the 'ORTO-15' questionnaire was 57, the lowest was 18 and the medium result was  $38,7 \pm 8,62$ . 816 people gained result below 40 points, what is connected with increased tendency to fall down with orthorexia. Being long interested in healthy eating, spending more money on groceries, not eating meat, reading the labels and regular meal consumption have influence on gaining lower score in the survey. Age, weight, BMI and amount of meals per day have not significant impact for orthorexia tendency.

There exist a predisposition to falling into orthorexia among students of polish universities. According to this fact, we consider that more attention should be paid to the problem of orthorexia, because it could be as dangerous as others eating disorders.

**Keywords: orthorexia, eating disorders, diet**



## **The content of soluble oxalates in selected cereal flakes from traditional and ecological cultivation**

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Oxalic acid in the form of soluble and insoluble oxalates is commonly found in many products of plant origin. Scientific research has repeatedly shown that excessive consumption of plants rich especially in soluble salts of oxalic acid may cause numerous ailments, due to their ability to bind minerals, mainly calcium.

The aim of this study was to determine the content of soluble oxalates in selected cereal flakes from conventional and organic farming.

The content of soluble oxalates in cereal flakes was determined by the manganometric method. The following flakes were tested: oat, rye, rice, millet, wheat, spelled, buckwheat, amaranth and barley (each from organic and traditional cultivation). Two grams of previously ground flakes, boiled according to the instructions on the packaging, were used for testing. The determined content of soluble oxalates was converted into 100 g of the dry mass of the tested product.

The highest content of soluble oxalates was found in organic oatmeal (162 mg) and the lowest in rice flakes from traditional cultivation (13,5 mg). The average concentration of oxalates in conventional cereal flakes was 53,5 mg, while in the case of flakes from organic farming it was 78 mg.

The content of soluble salts of oxalic acid in individual cereal flakes was varied. The average level of soluble oxalates was higher in organic flakes compared to their traditional counterparts. The most popular oat flakes were characterized by the highest content of soluble oxalates.

**Keywords: soluble oxalates, cereals, traditional agriculture, organic farming**

## **Dietary supplementation of folic acid and iron among women of childbearing potential**

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One of the major events in woman's life is pregnancy, and then childbirth. Therefore, it is important to prepare the body well for these duties by adequate folic acid and iron supplementation, not only during pregnancy but also before that. It determines the proper development of a child and helps preserve the health of a mom-to-be.

The study has consisted in verifying if the women of childbearing potential are aware of which diseases may develop in the case of absence of folic acid and iron supplementation during the pregnancy but also before. Furthermore, the research has helped determine how many non-pregnant but qualifying for childbearing potential women supplement folate and iron.

The study was conducted by using a proprietary online survey shared on forums dedicated to pregnancy and maternity. The questionnaire contains 10 closed-ended questions and 8 open-ended questions. The surveyed group consists of 103 respondents.

In the study group, there were 37.9% of pregnant women. In the group of pregnant women, 15.4% does not supplement iron and folic acid, 33.3% correctly indicates the effects of iron and folic acid deficiency. In a group of non-pregnant women, 54.7% does not use supplementation of indicated ingredients and 43.8% cannot indicate the effects of lack of supplementation.

The research has shown that more than half of women of childbearing age are not supplementing iron or folate, and therefore a wide range of educational campaigns should be prepared.

**Keywords: folic acid, iron, woman**

## Importance of a quality of nutrition among medical students

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The nutrition (it's quality and quantity) is very important in proper functioning of human body. Group of medical students is the special group of people which should be aware of importance of appropriate nutrition. Unbalanced diet can cause anaemia, headaches, condition drop, problems with concentration (and many more) and it may translate to study results.

Investigation of importance of a quality of nutrition among medical students.

We have made an online questionnaire on the group of 576 students of Medical Universities in Poland regarding the influence of importance of nutrition quality on this group. Group of students includes 81,6% women and 18,4% of men. Questionnaire consisted of respondent's personal data and 22 one-choice questions and two multiple choice.

The main results of our study in multiple choice question show that 93,4% responders prepare meal on their own, 48,3% answered that their meal is prepared by their life partner and 12,7% use ready-made meals bought in the store. The results show also that 49,1% of students use diet supplements. The most common supplements are vitamin D (58,5% of students using supplements), magnesium (26,8%) and vitamin C (18%) wherein the vitamin C is used primarily during periods of reduced of immunity. Additionally the study shows that in a group of students who eat vegetables and fruits more than 3 times per day (217 responders), 62,2% achieve greater than or equal 4,0 grade-point average in a scale from 2,0 to 5,0.

Nourishment is very important for students of medical universities. Their awareness of healthy nutrition is probably higher due to the type of study.

**Keywords: nutrition, medical students**

## **The consumption of flavored dairy products and assessment its influence on body fat content by secondary-school youth**

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The requirement for both macroelements and trace minerals is desperately crucial at puberty. The ingesting of milk products is pivotal in the daily diet on the grounds of its balanced protein and minerals.

The first goal of this study is to assess the frequency of flavoured dairy products consumed by high-school youth. The next target is to define the amount of provided monosaccharides in relation not only to body mass index but also the percentage of fat content, centile grid and z-score scale.

The survey is held by using authorial inquiry form and by the measurement of fat content due to Body Fat Monitor. 42 adult high-school students are randomly chosen for these studies. The average mass in one portion of given flavoured dairy and the amount of simple sugars it contains are determined on the basis of descriptions of commercially available comestible products.

The study shows that 83,3 % of interviewees consume flavoured milk products and the highest number of people (67,7%) eat dairy products less than 3 times a week. According to popular milk products labels, the mass of one flavoured yoghurt (150 grams) provides our body with 22 grams of monosaccharides. The consumption of milk products have no influence on students' body fat content as well. 71,4% of interviewees do not deviate from the norm of their age and sex.

These studies demonstrates that there is no correlation not only between consuming flavoured dairy but also the body mass index and fat content increase.

**Keywords: dairy, fatty tissue, nutrition**

## **Vegetarian vs traditional diet during pregnancy - Polish women's choice**

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Proper nutrition in pregnancy is extremely important, because at the time they need more essential nutrients and minerals for the proper development of the child and the health of the mother.

the aim of the study was to analyze the diet of pregnant women

The study covered a group of 100 pregnant women. The study was conducted using anonymous electronic questionnaire.

59% pregnant women used a traditional diet, 68% twice a week consumed sea fish, 74% of women thought that milk would provide them with calcium and B vitamins, 43% of women take dietary supplements.

The respondents use a varied diet. Promotional and health education in physical activity is necessary.

**Keywords: diet of pregnant woman, vegan**

## **Run Vegan - diet for endurance athletes**

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Run Vegan promotes running, conscious lifestyle and the idea of vegetable cuisine. More and more athletes and people connected with sport identifies with slow food.

The aim of the study was to analyze the impact of a vegan diet on sports performance.

The study covered a group of 80 runners. The research was carried out using a diagnostic survey, and the research tool was the author's questionnaire.

65% of runners have been vegan for 5 years, 37% runners do not use dietary supplements, 58% runners noticed an improvement in physical fitness after changing the diet to vegetable.

Vegan diet is not a contraindication to endurance sports.

**Keywords: diet, vegan, endurance sports**

## **Nutritional knowledge of dialysis patients and the method of filling in a questionnaire**

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Chronically dialysis patients should have adequate nutritional knowledge to be able to follow nutritional recommendations in their diet.

The aim of the study was to evaluate the nutritional knowledge of dialysis patients, compare the knowledge of the surveyed Internet users with the knowledge of patients interviewed in the dialysis station and analyze sources from which respondents learn about nutrition.

The study was conducted using an original questionnaire. 74 dialysis patients took part in the study, of which 32 were adult Internet users and 42 were patients of the Dialysis Station of the Gliwickie Centrum Medyczne.

In the question of the function of protein in the human body only less than 60% of dialysis patients chose the correct answer. More respondents were able to indicate the source of this nutrient (78%). 64% of dialysis patients knew which products are rich in sodium. 68% of respondents were able to identify sources of potassium, and 89% of them are aware of the consequences of excess of this nutrient in the diet. The average number of points scored by Internet users was 15,43, while in the patients of the Dialysis Center of the Gliwice Medical Center the arithmetic mean was much lower - 11,31.

The nutritional knowledge of dialysis patients is insufficient. The knowledge of Internet users who took part in the study was much higher than the knowledge of Dialysis Station patients. Most dialysis patients acquire nutritional knowledge from the doctor or the Internet. Few people in the study group consult dietary principles with a dietician.

**Keywords: nutritional knowledge, dialysis, chronic kidney disease**

## Quantitative assessment of intestinal bacteria and fungi in rats fed ketogenic diet

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Increasing knowledge about nutrition and healthy lifestyle leads to generation of different diets. One of them - high-fat, adequate-protein and low-carbohydrate ketogenic diet is being used in treatment of patients suffering from diabetes, obesity and intractable epilepsy.

The purpose of the study was quantitative assessment of an overall number of bacteria, bacteria of the coliform group, *E. coli* bacteria, anaerobic bacteria – *Clostridium* spp., *Salmonella* spp. bacteria and the general number of fungi present in the Long Evans rat's large intestine.

The faeces from the Long Evans laboratory rats, fed with standard diet were used as control. Examined samples, divided into three groups, were collected from rats fed with ketogenic diet for 30, 60 days and rats who returned to standard diet after 30 days of the ketogenic diet. To culture the bacteria the faecal samples were incubated on: nutrient agar for overall number of bacteria, Endo Les agar for bacteria of the coliform group, mFc medium for *E. coli* bacteria, TSC medium for *Clostridium* spp., SS medium for *Salmonella* spp. and Sabourauda medium for the general number of fungi.

The study shows that the ketogenic diet affects the intestinal microflora quantitatively. A gradual decrease in the number of *E. coli* bacteria and anaerobic bacteria during the use of the ketogenic diet was observed.

The discontinuation of the ketogenic diet and return to standard food resulted in a significant increase of all analyzed parameters above the standard value established in the control group.

**Keywords:** ketogenic diet, Long Evans rats, intestinal bacteria, intestinal fungi



## **Influence of thermal conditions on honey quality. Spectrophotometric determination of hydroxymethylfurfural (HMF) by White's method**

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Hydroxymethylfurfural (HMF) is a molecule consisting of a furan ring and both aldehyde and alcohol functional groups. HMF is an organic compound present in nutrition products, such as milk, honey, natural fruits juice, alcoholic beverages and bread. It is the product of the Maillard reaction resulting from food pasteurization, cooking above 150°C, or storage as a result of dehydration of sugars such as glucose and fructose. Level of HMF can affect organoleptic properties and quality of honey. It is proven that hydroxymethylfurfural in very high concentration is toxic and carcinogenic.

The purpose of the study was a comparative analysis of the honey quality from Polish apiary by White's method before and after exposition to thermal conditions.

In the study we used forest honey with raspberry and bird cherry, rapeseed honey, dandelion honey, buckwheat honey, cornflower honey and multi-flower honey. Samples of honey were examined in controlled thermal conditions. Spectrophotometric measurement of HMF was made at wavelengths of 284 and 336 nm in clarified aqueous honey solution with sodium bisulfite as a reference and with water as a sample.

The study showed differences in HMF concentration in honey samples exposed and not exposed to high temperature. White's method based on UV-VIS spectrometry is useful for determining HMF concentration in honey samples.

**Keywords: honey, hydroxymethylfurfural, White's method, UV-VIS spectrometry**

## Awareness of the impact of obesity on the risk of cancer

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Overweight and obesity is currently the biggest danger for public health in the 21st century worldwide. This problem is associated with many diseases and it leads to type 2 diabetes, insulin resistance and cancers.

The aim of this study is the evaluation of adults awareness about the influence of obesity on the risk of cancer.

The research of adults over 18 years old was conducted from summer to autumn (July-October) in 2016. The research included group of 330 adults aged 18-73, with the predominant group being aged 18-30. The instrument of research was an author's questionnaire. It was distributed by Computer Assisted Web Interview method. The outcome of the research was subjected to statistical analysis with the use of Statistica 12 computer program.

In the examined group 17,6% were overweight and 15,2% were obese. 13 (10,2%) people were diagnosed with cancer, 27 (21,1%) people were diagnosed with type 2 diabetes and 44 (34,4%) people were diagnosed with insulin resistance. In the evaluated group's nutrition there were several dietary mistakes leading to the development of excessive weight: frequent consumption of sweets, preferring to fry food, low consumption of fruits and vegetables and irregularities of eating. Lifestyle of 59,7% people is passive.

Awareness of the cancer development in relation with excessive body weight is inadequate. Although the respondents are aware of the health consequences of obesity, they are not strictly aware of cancers and overweight and they do not couple the problem of overweight and obesity with the risk of developing cancer.

**Keywords: obesity, overweight, cancers, awareness, knowledge, young adults**

## **Awareness of the influence of chemopreventive behaviors on the occurrence of cancer in patients with selected types of cancer**

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Cancer are second main cause of death, after diseases of cardiovascular system in Poland. Number of cancer cases will be gradually increasing due to accelerated endangering to risk factors connected with lifestyle and aging. Chemoprevention prevents of cancer by using substances which inhibit or slow down the carcinogenesis.

The aim of this study is to assess the awareness and behavior on the occurrence of cancer among patients with specific types of cancer.

The study was conducted at radiotherapy unit of Oncology Centre in Katowice in August 2016 and included 60 people. A research tool was author's questionnaire survey. The data collected was analysed using Microsoft Excel 2013 and Statistica 12 programmes.

More than a half of examined patients are characterised by excessive body weight: 32% of them are overweight, other 27% are obese, while 7% are malnourished. 48 % of respondents confirmed occurrence of cancer cases in their family. Almost 70% of examined patients estimates their lifestyle as rather healthy, most of them eat regular meals. 62% of patients observed the loss of weight since the moment of being diagnosed with cancer.

The low frequency of consumption of chemopreventive products as well as lack of attention on ingredients in food products by a small percentage of the respondents indicates that awareness of chemoprevention is insufficient. On the basis of the studies, there was a low correlation between the frequency of the consumption of chemopreventive products and sex, education and place of residence.

**Keywords: chemoprevention, prophylaxis, cancer diseases, prevention**

## The influence of honey storage in home conditions on its antioxidant properties

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Nowadays scientists are focused on searching the remedy for longevity. It seems that antioxidants could play the major role in these research due to their involvement in many repair processes and proper functioning of cells, as well as the mechanisms of maintaining young appearance. Moreover, antioxidants take part in killing pathogens, regulate lumen of blood vessels and prevent from some of the civilization disorders. The most common product which contains antioxidants is the green tea, but also honey is rich in them, and that is the one of the reasons why it is called a liquid gold.

Influence of storing honey at home conditions for one year on its antioxidant potential.

To determine the antioxidant potential of honeys, three various spectrophotometric methods were used: FRAP method-based on an ability of antioxidant to transfer unpaired electron and reduce iron Fe<sup>3+</sup>; DPPH method consisting of an ability of antioxidant to reduce free radicals; and the Folin-Ciocalteu reaction (FCR) to indicate the concentration of polyphenols. Water solutions of 16 honeys were analyzed. The results were expressed as trolox (T) [umol T/g honey] or gallic acid (GA) [mg GA/g honey] equivalents. The same methods and samples were used last year, in our previous study.

The range of antioxidant status was 0,2-1,7 [umol T/g] for FRAP method; 0,2-1,2 [umol T/g] for DPPH; 0,2-1,2 [mg GA/g] for FCR. The best antioxidant potential showed the buckwheat and honeydew honey and the lowest – the acacia honey.

Storing honey at home conditions: in a dark place, at room temperature, do not have a significant influence on its antioxidant potential.

**Keywords: antioxidants, honey, nutrition**

## Tuna – valuable source of nutrients or a threat for health?

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Tuna is a popular product consumed worldwide in different forms. WHO and FAO recommend consuming fish as there are many health benefits associated with its intake. However, we have to remember that despite their advantages seafood can be the main source of methylmercury for majority of society.

The aim of the study was to estimate the mercury accumulation in samples of fresh and canned tuna. Our intention was to check whether the form of fish we eat has effect on the concentration of this metal.

We verified if Hg levels fall within established norms. Four tuna steak and thirty canned fish from different producers were examined by AAS method (AMA 254). The samples came from varied fishing regions established by Food and Agriculture Organization of the United Nations.

The average content of mercury was estimated at the level of  $0,163364 \pm 0,157865$  ppm. The highest received concentration ( $0,82748$  ppm Hg) was in the sample of fresh tuna which came from Spain.

All of the studied samples contained Hg so both of the examined forms of tuna can be a potential source of methylmercury. It is also very important to remember that growing fetus and children are more vulnerable to exposition on Hg due to developing nervous system.

**Keywords: tuna, mercury, ASA**

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**INTERNATIONAL MEDICAL CONGRESS OF SILESIA**

# **SESSION OF GENERAL SURGERY**

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## The prevalence of the interior iliac artery occlusion in the abdominal aortic aneurysm patients – the lesson learned

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Insufficient blood supply in the pelvic region can significantly influence morbidity and mortality related to the abdominal aortic aneurysm (AAA) repair. Both, open and endovascular AAA repair result at least in occlusion of the inferior mesenteric artery ostium, which potentially leads to the sigmoid colon and pelvis circulation impairment.

To assess the incidence of internal iliac artery occlusion or stenosis in patients with AAA hospitalized in the Department of Vascular Surgery in Katowice–Ochojec.

Study was performed on 100 patients with AAA qualified to abdominal aortic surgery or endovascular repair. CT imaging reports and medical records were analysed. Sizes of aneurysms, common iliac artery involvement, intraaneurysmal thrombus presence as well as inferior mesenteric artery patency were assessed together with the bilateral internal iliac artery patency, stenosis or occlusion evaluation.

In the preliminary evaluation of the first 30 patients with AAA ( $58\pm 15$ mm, 39-101mm) the common iliac artery widening was noticed in 51.6% of patients. The presence of the thrombus in AAA lumen was observed in 67.7% of the patients. The full patency of both internal iliac arteries was noticed in 74.2% of cases, one side patency was noticed in 13%. Results are under development.

The knowledge on the pelvic blood supply should be an integral element of the preoperative surgical procedure planning. Despite the presence of intra-arterial thrombus in most of the AAA patients high patency rate of the inferior mesenteric artery was observed. Careful evaluation of other pelvic vessels is needed to ensure proper blood supply in this region postoperatively.

**Keywords:** abdominal aortic aneurysm, stenosis, internal iliac artery,



## **Willingness to pay – an important compound in the management of the vascular patents**

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Peripheral vessels disease is not only a serious therapeutic problem, but also, it is a significant expense in a budget of health care system. This group of diseases, in an out-of-hospital conditions, requires patient's active participation in matters of health-improving activities, rehabilitation, and frequently, in costs of medicaments, and treatment.

The purpose of this paper is to evaluate the patient's possibilities in the range of their involvement in the costs of the most common peripheral vessels disease therapy.

A group of patients with chronic venous disease, and patients with chronic leg ischemia, who were receiving an outpatient treatment, were examined for the purpose of this study. In this paper, an authorial questionnaire based on „willingness to pay” scale, which is an instrument in market researches and economic analyses, was used.

A remarkable diversity of responders' possibility to financially participate in the costs of treatment of both diseases, was observed; however, some patients were unable to obey all of the doctor's orders. In the group of patients with chronic leg ischemia, patients who do not possess resources to buy necessary medicaments draw attention.

Usage of the economic analyses in the planning of the treatment, as well as in the assessment of the factors influencing its efficiency, may be an crucial element in the planning of the therapeutic management in particular groups of patients.

**Keywords: willingness to pay, peripheral vessels disease, chronic venous disease, chronic leg ischemia**

## **Prognostic significance of VEGF-A and its soluble receptor-1 (sVEGFR1) in post-operative monitoring of colorectal cancer patients**

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The aim of study is to estimate the prognostic significance of VEGF-A and sVEGFR1 serum levels in patients who underwent colorectal cancer surgery.

The study included 42 patients (16 women and 26 men) who underwent surgery at the age of 52 to 88 (average - 64). In 31 cases the cancer was located in rectum, in the remaining 11 in rectosigmoid junction. According to Dukes classification 28 patients were in stage B and 14 in stage C. A control group of 20 healthy volunteers from the staff of WSS5 was introduced. The remission of neoplastic process was detected in 13 patients, from 3 to 18 months after the surgery. Serum levels of VEGF-A and sVEGFR1 were marked in all patients between 1 and 18 months after surgery using ELISA commercial sets by R&D Systems. Standard levels were adopted as 211,5 pg/ml for VEGF-A and 577,4 pg/ml for sVEGFR1. Additionally, CEA levels were marked in all patients (standard – 3mg/ml). Ethical Review Board of Medical University of Silesia approved the study. The results were analyzed statistically.

In patients without remission average level of VEGF-A was 249,3 pg/ml +/-64,1 and in the group with remission 406,3 pg/ml +/-61,4. sVEGFR1 level was 343,2 +/-108,1 pg/ml, higher than in the remission group where it was 218,3 +/-46,2 pg/ml. A ratio of sVEGFR1 and

VEGF-A levels was also calculated. Remission patients had the ratio of 1,53 and higher than in the group without remission which was 0,79. All average levels in both groups were statistically significant ( $p < 0,05$ ).

The use of VEGF-A and sVEGFR1 levels is an important prognostic factor in post-operative patients monitoring and can be use in qualifying patients for anti-angiogenic therapy.

**Keywords: VEGF-A, sVEGFR1, colorectal cancer**

## **The risk of I type endoleak in patients after endovascular aneurysm repair of abdominal aorta**

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An aneurysm is defined as dilatation of artery of 50% and loosing of wall's parallelism. Abdominal aortic diameter's dilatation above 30mm is called as the aneurysm. The Small ones (less than 55 mm) and asymptomatic aneurysms undergo an observation. An aneurysm which diameter is bigger than 55mm and symptomatic ones are qualified to surgery.

Among invasive methods of treatment, there are open surgery and less invasive endovascular. Stent-graft's implantation into aorta below renal arteries is called endovascular aneurysm repair (EVAR). Endoleaks are possible and the most common complications of EVAR.

Main purpose of our research was assessing a rate of risk of I type endoleaks in patients after EVAR.

For the analysis was created database of 210 patients who were treated by EVAR in 2013-2017. Patients were compared in terms of selected internal workloads, nicotinism, aneurysm morphology and the type of stent-graft used.

Among 210 patients after implantation of stent-graft, there were complications of the procedure in the form of periprosthetic in 65 of them. Among them, 24 patients with type I endoleak can be distinguished.

**Keywords: abdominal aorta aneurysm, endovascular, endoleak, treatment**

## Do I want to become a surgeon?

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The aim of this thesis is the analysis of the Medical University of Silesia students' attitude towards their future career choice as a surgeon and their knowledge about the current statistical data concerning this specialization.

The survey was conducted on the group of 393 students aged 19-28 of the medicine from I-VI years of the Medical Faculty at the Medical University of Silesia; it was carried out in a form of the anonymous Internet questionnaire. The survey included 15 questions, 9 of them were single-choice ones, 4 of them were half-open multi-choice questions, whereas 2 questions were marked according to 1-5 Likert scale (where 1 means the least crucial reason and 5 means the most crucial reason).

Slightly above half of the students participating in the research (55,7%) has ever considered surgery as their future specialization. Among those declaring their commitment to the surgery, 29.1% are determined to choose this specialization. The greatest popularity was achieved by both general surgery (58,6%) and vascular one (31.4%). The most significant factors which had the greatest influence on their choice were "the surgical character of the specialization" and "consentience of their interests". Students who are not interested in surgery, as the main reason of such a decision give "a physically and mentally exhausting job" and "a high stress level".

The analysis of the research results allows us to determine the most important factors decisive about either the choice or rejection of the surgical specialization. On this basis one can draw conclusions about the possible changes leading to the popularisation of the career choice as a surgeon.

**Keywords: surgery, a student, specialization, medicine**

## Medical and non –medical compression stocking – what do we know about it?

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Compression stockings are a common treatment of venous and lymphatic system diseases. Increasing knowledge about physiology of venous outflow is depicted in a diversity of modern medical undergarment. Despite this, impact of wearing trendy clothes isn't always in line with doctor's recommendations.

The aim of this research was to assess the accessibility of compression stockings among producers of medical undergarment as well as to assess the influence of popular clothes on maintaining a proper venous outflow from the lower limbs.

In the first stage, we analysed the offer of clothing companies in the range of available compression stockings. Data on companies and their products were obtained from product descriptions. Secondly, we measured the pressure exerted by the selected everyday clothing at various levels of the lower limb. For tests, we chose pants, leggings and slimming products form among our garments. The measurements were carried out using the Kikuhime device used to evaluate the compression therapy. The sensor located under the clothing, determines the pressure with an 1 mmHg accuracy.

Based on the analysis of the available clothing specifications, still only a small number of companies produce articles, whose properties align with therapeutic indications. Everyday clothes in a number of cases lead to a pressure gradient that impedes venous drainage from the lower limb.

Pursuing a slim figure may effect in abnormal venous outflow from the lower limbs, which is worth considering while selecting everyday clothing, in particular in people predisposed for the development of chronic venous diseases.

**Keywords: Compression stockings, chronic venous disease, post-thrombotic syndrome, lymphoedema**

## **Student – not a soldier. Thoracic outlet syndrome occurrence in WLK students population**

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Thoracic outlet syndrome (TOS) is a collection of clinical symptoms resulting from compression of the vascular and nerve structures in the thoracic aperture between the cervical spine and the armpit. Symptoms from the oppression of nerve structures dominate (95% of cases). In other cases there are symptoms of venous or arterial syndrome. The disease most often occurs in the 4th decade of life in approx. 0.3% - 8% of the population (data for the USA). TOS risk factors include: incorrect posture at work, stress, exercises requiring excessive strength of upper limbs, shoulder girdle injuries, posture defects.

The aim of the study is to determine if the frequency of TOS occurrence in WLK students in Katowice as an example of a group with inappropriate posture (sedentary lifestyle) is higher than the general population and what factors influence its reduction of TOS occurrence.

Medical students aged 19-28 studying at WLK in Katowice were qualified for the study. The subjects were questioned by an original questionnaire containing questions about the subject's lifestyle and experienced symptoms from potential TOS. Then was done a provocative test – a military test.

The results showed more frequent occurrence of TOS symptoms in people who spent more than 5 hours a day sitting than in the general population. It has also been shown that people who practice sport 3 times a week and more often the frequency of TOS symptoms is lower.

In the light of the above data, we can conclude that a sedentary lifestyle is conducive to the occurrence of TOS, while practicing sports reduces the risk of its occurrence in a given study group.

**Keywords:** Thoracic outlet syndrome, a military test, superior aperture of the thorax, paresthesia, surgery, sitting lifestyle, sport

## **What pathogens does your stethoscope carry? The assessment of microbial flora of the medical students' stethoscopes**

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Hospital acquired infections are a great concern for health care professionals, patients and their families. Taking into account morbidity, mortality and costs, precautions should be taken to prevent spread of pathogens.

We conducted this study to determine the bacterial flora of the stethoscopes of medical students and raise awareness of the importance of disinfecting stethoscope diaphragms

Swab samples were collected from 20 stethoscope diaphragms for microbiological testing including bacterial identification, resistance mechanisms and drug resistance. Then, we compared microbiological results. We also handed out questionnaires to identify their basic hospital hygiene behaviours.

Bacterial culturing revealed various bacteria inhabiting stethoscope membranes. The identification of antibiotic resistance indicates that some of the bacteria could be potentially risky in case of the contact with the patients at risk of bacterial infection including post-surgical patients and patients with immunodeficiency diseases.

This study shows that students should be reminded to disinfect stethoscopes more often as they might become a sources of infection transmission which could be easily prevented.

**Keywords: Hospital acquired infections, disinfection, Bacterial culturing**

## **The assessment of practices and knowledge on surgical hand preparation among medical students of Medical University of Silesia during their clinical years**

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Surgical site infections adversely influence patients' recovery. Adhering to surgical hand preparation guidelines is a cost-effective way to prevent transmission of microorganisms.

We conducted a study to assess the knowledge and compliance to surgical hand preparation procedure among medical students in their fourth, fifth and sixth year of medical school.

40 students from fourth, fifth and sixth year were randomly chosen to participate in the study. Their adherence to WHO surgical hand preparation guidelines was observed and recorded. We assessed time of scrubbing, number of steps executed correctly and technique. Then, a questionnaire was given to test their theoretical knowledge and experience.

We found that most students do not know how to scrub for surgery. Their technique is poor and time taken to execute all the steps is not long enough. Many students would like to learn more about surgical hand preparation during their surgery rotation.

Steps should be taken to successfully teach students surgical hand preparation.

**Keywords: surgical hand preparation, students**



## How much does a surgeon actually work?

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Despite the proposed legal regulations, the number of hours that doctors work still remains high. Overtime work as well as shift work may potentially affect health conditions of both medical staff, namely, doctors and nurses.

The present thesis attempts to assess doctors' work engagement as well as the habits that might potentially affect the health of the doctors working on the surgical wards.

Based on the prepared survey, an attempt was made to assess the actual number of hours that doctors work in the vascular surgery department. The study consulted the number of working hours on the ward, doctors' shifts and other medical activities performed during a month. In addition, questions about free time, recreation and potential health-related habits were asked.

In the majority of analysed cases, weekly numbers of doctors' working hours significantly exceed the establish norms. The results do not change depending on such factors as the level of medical education, specialization and position. The analysis focuses on the fact, due to the lack of time doctors, in all age groups, do not pay attention to their pro-health behaviours.

Strain related to the surgeon's profession and the number of surgeons' working hours have a significant impact on the health conditions of the aforementioned group. In the absence of changes in the scope of workloads along with the age of the analysed population, it is crucial to propagate pro-health behaviours in the surgeon's environment.

**Keywords: work time, surgery, cardiovascular risk**

## Spider veins – a cosmetic defect or a bigger health issue

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Chronic venous insufficiency is an increasing health problem which is caused by many risk factors.

To evaluate the correlation between the signs (which are assessed by the doctor) and the symptoms (which are subjective, experienced by the patient) of the chronic venous diseases with the particular consideration of early signs of chronic venous diseases.

70 female students of medicine at the age from 19 to 30 were subjected to the study evaluating the occurrence of the risk factors of venous diseases and the presence of signs and symptoms of venous system insufficiency.

The presence of teleangiectasis (C1 according to CEAP) was asserted in about 30% of interviewees among which afflictions connected with venous insufficiency (the feeling of heaviness, tension, pain or itching of the skin of the lower limbs) was not stated. At the same time the occurrence of the above symptoms was asserted in 60% of the interviewees who didn't present with venous insufficiency signs such as teleangiectasis, swelling and varicose veins.

The varied symptomatology of chronic venous diseases indicates the necessity to evaluate both the signs and the symptoms of the disease which can occur in the population of young people. The lack of strict correlation between the signs and the symptoms justifies paying attention not only to the deviations assessed in the physical examination but also to the symptoms given by the patient.

**Keywords: chronic venous insufficiency, spider veins**

## **Comparison of mechanical methods of thromboprophylaxis and their impact on the flow parameters in peripheral veins**

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Venous thromboembolism is a disease affecting venous vessels, occurring as a result of endothelium inflammation, which promote forming of a thrombus. Mechanical methods are commonly used in venous thromboembolism prevention. Compression stockings, intermittent pneumatic compression (IPC) and electrical calf muscle stimulation (EMS) are methods used for thromboprophylaxis.

The aim of this study was to evaluate an impact of these three methods on blood flow parameters in popliteal vein.

The study was performed on a group of 10 male volunteers aged 20-25. There was no evidence of the lower limbs ischemia noticed. Flow parameters in USG Doppler were rated in patients popliteal veins: flow volume (FV), maximal velocity (Vmax) and average flow rate (TAmn). The study was performed in each patient 6 times: before and during wearing compression stockings, before and during use of the IPC, before and during use of the EMS.

Both IPC and ECS significantly improved the flow parameters in the examined veins, that indicated the potential advantage of the active method of the vein outflow improvement over the passive stocking based method.

Active mechanical methods of thromboprophylaxis have a significant impact on the venous outflow parameters and should be used to prevent thrombus forming in veins.

**Keywords: Active mechanical methods of thromboprophylaxis, Venous thromboembolism**

## **Sclerotherapy of varicose veins - optimal ways to create foam**

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Foam sclerotherapy is a method recognized worldwide used for treating varicose veins, spider veins or reticular veins. The sclerosing agents are administered in either liquid or aqueous foam form. It is considered that the standardized method of production has not been established yet.

The target of thesis is a trial of objectivism and normalization of the foam production of eburation chemicals to use in vein vessels obliteration.

According to Tessarie's method, thesis concerns comparison of different ways of foam production of sclerosing agents. Syringes containing different covers of internal surface were used during the experiment as well as different pressures of the amount of passages by connector. The quality of the foam was estimated in dependents upon the intensity of sclerosing agents and the needle for sclerotherapy that was used.

Foam's optimal quality and durability were achieved by using a syringes with reduced silicon's content and under pressure. Feeding foam by needle's diameter over 26 G causes its relevant destruction toward liquid.

The correct foam sclerotherapy's execution must take into consideration knowledge about characteristic of sclerosing agents, the possibility of making durable and effective foam as well as optimal conditions of its creation.

**Keywords: Sclerotherapy**

## Laparoscopic surgery for achalasia – single-center experience

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Achalasia is an esophageal motility disorder that results in increased lower esophageal sphincter tone causing dysphagia. Current surgical treatment options include laparoscopic Heller myotomy for primary achalasia and laparoscopic cardioplasty in case of recurrence.

The aim of our study was to assess the outcomes of laparoscopic surgery for achalasia in a single center.

The retrospective study included 56 patients (males/females: 31/25, median age: 44 [IQR: 30-56] years) who underwent laparoscopic Heller myotomy (50, 89.29%) or laparoscopic cardioplasty (6, 10.71%) between 2008 and 2017 in the 2nd Department of General Surgery of Jagiellonian University Medical College. Preoperative variables and perioperative outcomes were analyzed. Patients received phone call follow-up. The long-term clinical outcomes were assessed with the use of the Eckard score (ES).

Mean operative time was  $87 \pm 26$  minutes. Intraoperative complication described as mucosal perforation of the esophagus occurred in 6 (10.71%) cases. Postoperative complications were observed in 2 (3.57%) patients. Median length of hospital stay was 2 (IQR: 1-3) days. 39 (69.64%) patients responded the follow-up phone call. Median ES was 2 (IQR: 1-3). Clinical remission was observed in 35 (87.18%) patients. 37 (94.87%) patients declared satisfaction with the treatment results.

Laparoscopic surgery for achalasia is safe and effective. The majority of patients were satisfied with the treatment results.

**Keywords:** achalasia, myotomy, cardioplasty, laparoscopy

## Surgeons' perception of the Surgery Nurse profession

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People who are working in an Operative Theatre have to be able to working in team. Necessary for high quality working there, are good relationship among representatives of different medical professions.

The aim of study is term what is the Surgeons' perception of the Surgery Nurses profession group, who are inherent part of Operating Team.

In this study employed anonymous survey developed uniquely for this project which was fulfilled by 26 surgeons (17 male and 9 female) working in Górnośląskie Centrum Zdrowia Dziecka w Katowicach. The biggest group of the interviewees was between 46 and 55 years old.

Majority of interviewees claimed that Surgery Nurse can be male and female. Everybody answered that experience in work has an influence for its quality. 88% people who joined in the study claimed that Surgery Nurse is equal member of the Operative Team and 96% take into account Nurse opinion about choice instruments during operation. Responsibility, ability to focus and working in team also swiftness of operation are mentioned as the most important attributes of Surgery Nurse.

Research result shows, that in the majority Surgery Nurses are perceptions as a partner for surgeons, which has a positive influence on atmosphere and cooperation. Unfortunately some doctors don't respect other co-worker and treating Nurses as worse. Surgery Nurses should strive to professionalism and acquire new experiences, because – according to study- they have greater value than degrees and certificates.

**Keywords: Surgery Nurse, Surgeon, Operative Theatre, Interpersonal relationship**

## Laparoscopic surgery in elderly – the analysis of early perioperative outcomes

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As the previous research provides conflicting findings, the impact of the older age on the outcomes of laparoscopic surgery still remains uncertain.

To assess whether the older age is a predictor of the inferior course and early outcomes of laparoscopic elective surgery.

The retrospective analysis was conducted among patients who underwent laparoscopic elective surgery. Two groups were distinguished: patients <65 and ≥65 years old. According to the WHO definition, a cutoff age of 65 and above classified patients as “elderly”. Intra- and postoperative parameters recorded within 30 days after the initial surgery were considered endpoints of the study.

The analysis included 1315 patients after laparoscopic surgeries: 196 splenic, 524 adrenal, 134 colorectal, 251 gastric, 154 pancreatic and 56 hepatic. 413 (31.41%) patients were 65 or older. Median operative time was significantly longer in elderly patients ( $p<0.001$ ), whereas the rates of intraoperative adverse events and conversions were comparable between the groups ( $p=0.158$  and  $p=0.081$ , respectively). More postoperative complications ( $p=0.003$ ), higher mortality rate ( $p=0.002$ ) and longer median hospital stay after surgery ( $p<0.001$ ) were observed after the laparoscopic procedures in patients ≥65 years old. The groups did not significantly differ in terms of reoperation and readmission rates ( $p=0.366$  and  $p=0.479$ , respectively).

Except longer duration, laparoscopic elective surgeries in elderly patients are performed safely, without increased incidence of adverse events. However, elderly patients are at higher risk of 30-day postoperative morbidity and mortality.

**Keywords:** laparoscopic surgery, elderly patients, postoperative complications

## The incidence of thermal skin burns in children, according grodno region

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One of the leading places of domestic injuries belongs to thermal burns of the skin, which are the most common type of childhood injuries. About 10 thousand children apply for inpatient medical care in the Republic of Belarus every year.

To study the prevalence of thermal burns of the skin in children on the basis of data from Grodno regional children's clinical hospital.

A retrospective analysis of 467 medical histories with thermal lesions during inpatient treatment in Grodno regional children's clinical hospital for the period 2013-2017 was carried out.

In total, 467 patients with thermal trauma were hospitalized in 2013-2017, 78% of them were hospitalized in the emergency surgery Department, and 22% - intensive care unit with signs of burn shock. By gender: 40%, boys – 60%. By age: up to 1 year 39%, from 1 year to 3 years – 48%, older than 3 years - 13%. The most common thermal agent acting on the child's skin: hot liquids - 96% water – 67%, tea 18%, coffee 10%, broth – 13 3,7%, milk – by 1.3%. Distribution of children by days of burn injury: Monday 18%, Tuesday – 14,7%, medium – 14.5 per cent, Thursday to 14.5%, Friday – to 12.2% on Saturday and 13.3%, Sunday is 12.7%. According to our data, in the overall structure of hospitalized patients, the most common burn injury is observed in the summer – 26.6% of the person and in the fall – 27%, during maximum activity. In spring-26%, and in winter – 20.4%.

The analysis of burn injury in children provided to establish the influence of epidemiological factors on the formation of children's burn injury in the Grodno region, which will create an algorithm of preventive measures.

**Keywords: thermal burn, wound, children**



## **Electrical muscle stimulation with Veinoplus device in the treatment of symptoms of chronic venous diseases**

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Electrostimulation is used in physiotherapy, rehabilitation and in the treatment of some afflictions. Moreover lower limb electrostimulation devices are used in prophylaxis of venous thromboembolism which impels to use this kind of calf muscle pump activation in the treatment of symptoms of chronic venous disease of the lower limbs.

The aim of the study was to assess the effectiveness of lower leg electrostimulation using Veinoplus device in treatment of symptoms of chronic venous disease of the lower limbs.

The study was performed on a group of patients with the signs and symptoms of chronic venous disease of lower limbs. Presence of the illness was validated by USG Doppler. In this exam there was also evaluated the flow rate in femoral and popliteal veins before and during the therapy.

In patients in a recumbent position, time average velocity (TAV) and minute volume flow (MVF) in popliteal vein measured with Veinoplus device increased significantly in comparison with no stimulation ( $p < 0,05$  for both measurements). In patients with venous insufficiency in standing/sitting position, increase of average velocity ( $p < 0,05$ ), maximum velocity ( $p < 0,05$ ) and minute volume flow ( $p < 0,05$ ) were noted.

Using electrostimulation of the lower limb has beneficial effect on improving venous outflow, simultaneously reducing the symptoms relevant to chronic venous disease of the lower limbs.

**Keywords: Electrostimulation of lower limb, chronic venous disease, venous thromboembolism, prevention**

## **Retrospective comparative assessment of results of carotid artery stenosis treatment with open-cell, closed-cell and hybrid-cell stents**

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Carotid artery stenosis is mostly caused by general atherosclerosis and may lead to many severe complications. Carotid artery stenting (CAS) is an alternative, endovascular method to carotid endarterectomy. However, there may be an impact of stent cell design on the result of clinical outcome.

The aim of this study was to compare the periprocedural and clinical outcomes of CAS procedure depending on the stents design.

Clinical material includes data of patients who underwent the procedure of internal carotid artery revascularization in the year 2017. This study is a retrospective comparison of clinical outcomes in the groups of symptomatic and asymptomatic patients. CAS procedures were performed with open-cell, closed-cell or hybrid-cell stents, with distal protection devices. We compared periprocedural and post procedural complications during 1, 3 and 6 months, divided into neurological adverse events, restenosis and others.

We compared adverse events in patients who received open-cell stents, closed-cell stents and hybrid-cell stents. Percentage of neurological and puncture-localized complications was comparable in all patients beside received stent cell design. Incidents of restenosis were more common in patients who received an open-cell stents.

The results of this study showed no significant difference in frequency of complications occurrence between open-cell, closed-cell and hybrid-cell stent design. However, the percentage of restenosis incidents was higher in patients with open-cell stents.

**Keywords:** Carotid artery stenosis, CAS, stent cell design

## **Assessment of medical students awareness in the field of venous thromboembolism during a long distance air flight**

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Worldwide air traffic reaches about 2.3 billion passengers yearly. A complication of long air travel is venous thromboembolism(VTE). It manifests itself as a deep vein thrombosis (DVT) and/or pulmonary embolism (PE). Despite the relatively significant incidence of this disease, access to information about its risk factors as well as effective prevention is limited.

The aim of the study was to assess the knowledge of medical students(clinical years) of Medical University of Silesia in Katowice in the field of venous thromboembolism connected to air flights.

A questionnaire was performed on a group of 25 medical students. Participants of the study based their answers on knowledge acquired at the university.

Proper incidence rate of VTE associated with air flights was pointed out by 48% interviewees. None of the students had given the correct combination of the VTE risk factors. 40% was familiar with the pathogenesis of VTE occurring as a result of air flights. Rewarding is the fact that 100% was aware that proper flight outfit can reduce the risk of air flight VTE.

Survey results show low level of knowledge as well as awareness level related to VTE associated with air flights in the population of the Medical University Students. Greater concentration on the problem during medical classes should be taken into consideration.

**Keywords: Venous thromboembolism, long air flights, prevention**

**JOURNEY  
THROUGH  
MEDICINE**  
APRIL 25-26 th 2018



**INTERNATIONAL MEDICAL CONGRESS OF SILESIA**

# **SESSION OF GYNAECOLOGY AND OBSTETRICS**

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## **Medical doctor or Google MD? Over the counter drugs usage among pregnant women**

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Self-treatment is an independent diagnosis of a disease on the basis of ailments and treatment without medical consultation. Each pregnant woman is an unique patient, requiring special precautions while choosing drugs

The article aims at assessing frequency of medication use prescribed by a doctor in comparison to self-healing and the most popular sources of information about health problems during pregnancy.

The study involves 253 pregnant women at the age of 17 to 43 years. The article is based on the results of a questionnaire which consists of 18 questions. Statistical analysis was performed in the program "Statistica".

Pregnant women more often reach for medicine while suffering from headache, cold or fever (53%) rather than from gastric discomfort (23%). The most commonly used OTC painkillers (73%). The respondents claimed to use non-prescribed medicine the most rarely during the third trimester of pregnancy (49). Statistic shows that 86% out of the 147 women who take drugs without prescription, follow the leaflet recommendations, 10% modify the dosage by themselves, and 4% do not read the leaflet at all. Almost every fifth pregnant woman from the surveyed group considers OTC to be completely safe during pregnancy. The most common source of information about pregnancy disorders is the doctor while the Internet is on the second place.

Easy access to both information and medications leads to situation in which even pregnant women decide to conduct therapy without a doctor's supervision. Pregnant women often look for information in various sources, not relying only on the doctor's knowledge.

**Keywords: OTC drug, medications, pregnant women**

## Coveted parenthood- a few words about problems with procreation

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According to increasing scale of infertility this condition is considered by WHO as a social disorder as it becomes a problem for almost 1,5 million couples in Poland.

The purpose of this article is to assess how environmental and health factors impact the prevalence of infertility among surveyed couples.

The survey was conducted among 663 women aged 17 to 45 in the Clinic of infertility treatment Gyncentrum Clinic in Katowice, additionally online survey was used. Surveyed women were divided into 3 groups: fertile, infertile and secondarily infertile. The article is based on results of the authorial survey made of 27 questions. Statistical analysis was performed using Statistica software.

Fertile women represented 57,2% of all respondents, infertile 35,3% and women with secondary infertility 7,5%. In the group of infertile women 57,3 % were diagnosed with infertility cause: ovulation disorder 44%, endometriosis 31,3%, hyperprolactinaemia 29%, PCOS 14,9%, whereas 27,6% of women chose male factor as a reason of infertility. Infertile and secondary infertile women undergo physical activity more often than fertile ones. Infertile woman used alcohol more often (84%) but also were least likely to smoke cigarettes (24%).

Infertility is a serious social issue as it is a result of vast prevalence rate in the group of people in procreative age. Nowadays when healthy lifestyle and physical activity are wildly promoted it is surprising that women who keep exercising have far more difficulties with conceiving than women who are overweight.

**Keywords: infertility, endometriosis, hyperprolactinaemia, fertile, infertile, secondary infertility**

## The beginning and the end of prenatal life. What is our approach towards these issues?

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Intervention in contraception and prenatal life is nowadays very controversial topic. In vitro fertilization(IVF) is one of the possible option in case of infertility, whereas when there is fetus defects it is possible to terminate the pregnancy.

The aim of study was to evaluate factors limiting attitude of Polish university students towards IVF and pregnancy termination.

10124 students took part in our survey (79,7% women and 20,3% men) in the age bracket 19-35. They were asked to fill the original questionnaire which consisted questions including their personal and demographic data as well as their attitude towards IVF and pregnancy termination.

55,8% of students declared as Roman Catholic believers. More women than men consider that IVF should be legal in our country (89,11% vs 80,74%;  $p < 0,001$ ). More non-believers than Roman Catholic believers(83,25% vs 56,90%;  $p < 0,001$ ) and more woman than man(89,11% vs 80,74%;  $p < 0,001$ ) would decide to undergo IVF in case of own infertility. More woman than men consider that abortion should be legal in the situation of threat to mother's life (90,21% vs 85,05%;  $p < 0,001$ ) and the same in the hard financial situation of mother(46,60% vs 35,23%;  $p < 0,001$ ). Much more non-believers accept abortion while there exists a threat to mother's life (89,61% of non-believers vs. 54,20% believers;  $p < 0,001$ ).

Majority of students thinks that IVF and abortion should be legal methods as in the present law. The main factors conditioning the opinion are gender, Roman Catholic belief and branch of study. Most of them would decide on IVF in case of their infertility

**Keywords: abortion, in vitro fertilization, gynaecology**



## **Incidence and prevalence of thyroid dysfunction in patients with polycystic ovary syndrome**

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The most frequent recognised endocrinopathies are thyroid disorders and polycystic ovary syndrome(PCOS)

We aimed to evaluate the prevalence of clinical, subclinical, potential thyroid autoimmune diseases in a group of patients with PCOS compared to healthy controls.

278 patients referred to our Department of Endocrine Gynecology over the period of 24 months (2016-2017), and diagnosed with PCOS according to the Rotterdam criteria, were included in the study, and 147 age-matched healthy women were enrolled as controls. Each patient was evaluated for personal history of autoimmune and non-autoimmune diseases and tested for auto-antibodies against thyroperoxidase, thyroglobulin. Serum TSH, FT4, FT3 levels had been measured in all patients.

AIT was present in 46/278 (16.5%) patients compared with 5.4% of controls ( $p<0.005$ ). Hypothyroidism and subclinical hypothyroidism was detected in 30/278 (11%) patients which included 3% patients with AIT; Thyroid function and thyroid-specific antibody tests revealed elevated thyroperoxidase (TPO) or thyroglobulin (TG) antibodies in 10 of 147 controls (6.8%), and in 64 of 278 patients with PCOS (23%;  $P<0.005$ ). PCOS patients had a higher mean TSH level ( $P<0.005$ ) and a higher incidence of TSH levels above the upper limit of normal (PCOS 4.3%, controls 1.2%;  $P<0.005$ ).

The prevalence of AIT in patients with PCOS was significantly higher than in controls. No other autoimmune diseases were associated with PCOS. This observation suggests that PCOS patients should be screened for AIT. Further long-term studies are required to assess the significance of thyroid dysfunction in patients with PCOS, especially on fertility.

**Keywords: autoimmunity, polycystic ovary syndrome, thyroid, fertility**

## **Are the guidelines of Gestational Diabetes Mellitus (GDM) obeyed on example of population of Upper Silesia?**

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Gestational Diabetes Mellitus endangers 3-10% of pregnancies. Also, there are exist many women who are positive with one or more risk factors of having GDM. Sometimes women are poorly informed and examined for this illness.

The aim of our study was to check if pregnant women carry out the oral glucose tolerance test (OGTT) at the adequate time during their obstetrician visits.

The study was conducted at the obstetrician ward in the hospital in Tarnowskie Góry (Poland). 132 women after the delivery took part in the research answering the questionnaire which consists of questions about medical history and anthropometric data. All data were analysed in Statistica 12.5 programme.

Of 132 women in mean age  $33.2 \pm 4.8$  years, mean declared BMI before pregnancy was  $23.4 \pm 4.5$ . According to international and Polish guidelines risk's factors were: being overweight or obese (24%), having first-degree relative with diabetes (13%), hypertension (6%), history of intrauterine deaths (20%) and being older than 35 years at the time of pregnancy (40%). Women presenting risk factors for GDM had the OGTT performed in mean  $19.1 \pm 5.9$  weeks after the first prenatal visit. Mean gestational week for the OGTT for women with risk factors for GDM was  $24.3 \pm 5.3$ hbd. None of pregnant women had the OGTT immediately after the first prenatal visit as is recommended.

What must be realized is that 100% of women with risk factors for GDM didn't have the OGTT performed at the right time. The awareness among doctor taking care of pregnant women of recommendation regard GDM testing should be increased.

**Keywords: pregnancy, gestational diabetes mellitus, OGTT**

## **Do the co-accompanying diseases and metformine intake have an impact on the development of endometrial and ovarian cancer?**

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Cancers of the female reproductive system are one of the most frequent diagnoses nowadays. The disease course and further prognosis are influenced by the co-accompanying diseases and the pharmacotherapy associated with them.

The aim of our study was to establish a correlation between the occurrence of diabetes mellitus, hypertension, nicotinism and use of metformine among women diagnosed with endometrial and ovarian cancers.

We analyzed retrospectively the medical histories of 650 patients, including: 438 (67.4%) women diagnosed with endometrial cancer and 211 (32.5%) - with ovarian cancer. The analysis included factors such as menarche age, number of births, family burden, age, BMI index, co-morbidities (diabetes, hypertension and the metformine treatment). For the statistical analysis we used Statistica 12.0.

In the study group were 152 (23,4%) patients with diabetes mellitus included: 119(27,2%) of them encountered endometrial cancer and 33 (15,6%) - ovarian cancer. Hypertension was observed in 379 (58,3%) patients: 265 (60,5%) with endometrial cancer and 114 (54%) with ovarian cancer. 138 (21,2%) women were addicted to nicotine. 74 (11,4%) patients were treated with metformine, 63 (14,4%) of them had endometrial cancer and 11 (5,2%) - ovarian cancer. Metformine intake in patients was statistically significant ( $p=0,046$ ).

Diabetes mellitus, hypertension and nicotinism have a significant influence on the development of endometrial and ovarian cancer. Our study showed that metformine intake is also an important factor of the occurrence of these cancers. Further investigations should be performed in order to assess this correlation in other groups of patients.

**Keywords: ovary cancer, uterine cancer, hypertension, diabetes mellitus, metformine**

## Hirsutism and its impact on self-esteem in women using antiandrogenic contraception

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Women suffering from polycystic ovary syndrome, hirsutism or endometriosis may often struggle with deterioration of their self-esteem and their quality of life. Antiandrogenic contraception should be taken into consideration when choosing the type of contraceptive pills.

The aim of our study is to establish correlation between taking antiandrogenic drugs and hirsutism in women. Furthermore, we would like to examine the connection between intensity of hirsutism and self-esteem, and between the type of contraception and self-esteem.

141 women that had been using contraception for at least three months took part in our research. An anonymous survey has been conducted. In order to rate the intensity of hirsutism we used the Ferriman and Gallwey scale. Moreover, women self-esteem was measured by the Rosenberg scale (RSES). We divided women into two groups: those taking antiandrogenic contraception and those taking contraceptive pills without antiandrogenic component.

141 women aged  $21.62 \pm 1.78$  filled the questionnaire. 87.23% (n=123) of them is in a relationship. Vast majority of women finished their secondary education and have a very good housing conditions. 30.5% (n=43) women take contraceptive pills without antiandrogenic component. 11.35% (n=16) suffers from the polycystic ovary syndrome. 30.5% (n=43) of women have observed excessive hairiness on their body before taking the contraception. Out of them, 13 women observed reduction or total disappearance of excessive hairiness after commencement of taking contraception. The mean total score of RSES was  $29.62 \pm 5.88$ . Our results are still being analyzed.

Many young women suffer from excessive hairiness which may have big impact on their well-being.

**Keywords:** Hirsutism, antiandrogenic contraception, self-esteem

## **Do hypothyroidism and BMI increase metabolic risks in patients with polycystic ovary syndrome (PCOS)?**

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Both hypothyroidism and PCOS are associated with adverse metabolic changes. Hypothyroidism is observed significantly more often in patients with PCOS than in the general population (approximately 24,6% vs. 6 %).

The aim of our study was to evaluate the influence of BMI and concomitant hypothyroidism on the metabolic risks in PCOS women.

Retrospective research included 1159 women with PCOS that were admitted to the Gynaecological-Endocrinology Unit between 2014 and 2017. We divided them into 6 groups depending on their BMI and thyroid status (subdivided on hypothyroidism treated with L-thyroxine and untreated hypothyroidism). The control group included PCOS women with normal BMI (18,5-25) and TSH within reference ranges. The results of glucose tolerance test and lipid profile were analyzed. Statistical analysis was performed using Statistica 12.0.

In our study we observed statistically significant differences between control and all study groups in terms of insulin in 120' of OGTT Test. Differences in LDLC level were observed between patients with treated and untreated hypothyroidism. Patients with normal BMI (18,5-25) and BMI >25 vary in level of ALAT, GGTP, HDLC, TG, glucose 120', SHBG, insulin in 0', 30', 60', 120' of OGTT Test, G/I index, HOMA-IR and QUICKI ( $p < 0,005$ ).

Hypothyroidism and BMI >25 in PCOS patients have a negative influence on their glucose and lipid metabolism, causing an increased risk of metabolic syndrome. That is why maintaining normal BMI and regular thyroid status assessment is advised in this group of patients.

**Keywords: PCOS, hypothyroidism, BMI**

## How diabetes and obesity affect the condition of newborns and mothers

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Metabolic disorders of pregnancy affect the course of gestation and medical prognosis. Gestational diabetes mellitus (GDM) is defined as glucose intolerance diagnosed during pregnancy. Most often blood sugar levels normalize after delivery. It is estimated that 10% of pregnant women are affected by GDM. Obese women are under risk of pregnancy-related disorders such as arterial hypertension, edema, preterm labor and cervical insufficiency. Pregnancies affected by these abnormalities are delivered via caesarian section more often than undisturbed pregnancies.

Analysis and assessment of medical conditions of newly-delivered mothers and newborns following pregnancies affected by various comorbidities.

The study group consisted of 138 pregnant women with various comorbidities, who gave birth by caesarian section in Clinical Department of Gynecology, Obstetrics and Oncological Gynecology in Bytom.

In the study group 17 patients suffered from diabetes, in which 14 cases pertained to GDM. In comparison to women with normal blood sugar level, women in this group were hospitalized longer (7,353 vs. 4,820), had higher RBC count before delivery (4,283 vs. 4,055), fibrinogen (5,338 vs. 4,176) and CRP (20,039 vs. 6,980). 14 patients were obese which resulted with large for gestational age fetus, higher platelets level and reduced leukocyte mobilization, compared to women with normal body weight.

Women with GDM or obesity are at greater risk of complications of pregnancy such as thrombosis and increased inflammatory response. Cephalopelvic disproportion among obese pregnant women is caused by large for gestational age fetus and it is common indication for caesarian section.

**Keywords: pregnancy, diabetes, obesity, obstetrics, cesarean section**

## **Assesment of the frequency of supplementation of folic acid by women aged between 20-27 years**

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Folic acid, found naturally in many fruits and vegetables helps prevent neural tube defects in a developing fetus. Specialists recommend that women who are capable of getting pregnant or planning to do should take a supplement of 0.4-0.8 milligramsof folic acid.

The purpose of the study was to assess the knowledge about the effects of folic acid and estimate how many women of childbearing potential take folic acid.

In the study participated 76 women aged from 20 – 27. The self-composed questionnaire consisting of 23 questions, regarding demographic data and knowledge about effects of folic acid deficiency and knowledge about food products rich in this vitamin.

76 women participated in the study. The surveyed women manifested the effects of deficiency, primarily neural tube defects (96%). 4% of women were not sufficiently awareof effects of folic acid deficiency. Majority of respondents (67%) did not take the dietary supplementation with folic acid. The most common cause of not supplementation folic acid was that women do not planning to have a child in the near future.

The respondents presented a very high level of knowledge about the effects of folic acid.

**Keywords: folic acid, dietary supplements, women of childbearing age**

## **Assesment of diagnostic value of the middle cerebral artery peak systolic velocity in intrauterine myelomeningocele repair by open fetal surgery**

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Intrauterine myelomeningocele repair (IUMR) by open fetal surgery (OFS) is performed between 24w0d – 26w0d in the Department of Gynecology, Obstetrics and Gynecological Oncology of Silesian Medical University In Bytom since 2005. The OFS has been improved over years, however the procedure has its limitations and side effects. One of these side effects is a fetal anemia which can be estimated by ultrasound (USG) Doppler measurement of middle cerebral artery (MCA) peak systolic velocity (PSV) and presented as multiple of median (MoM).

The aim of this study is to asses if MCA PSV changes during OFS and can be used as an potential marker of fetal anemia.

The study group consisted of 10 patients who underwent IUMR in 24 week of gestation. The MCA PSV was measured day before, directly and 7 days after OFS by the same ultrasonographer and USG device (Samsung HS70A). The values of MCA PSV were calculated and presented as MoM.

Our study has shown that average MoM after IUMR changes by 0,37. Three fetuses presented MoM equivalent of severe anemia, 6 fetuses were slightly anemic and 1 non anemic. After 7 days 2 fetuses presented MoM of middle anemia while 8 returned to reference values.

The measurement of MCA PSV as a marker of fetal anemia after IUMR in our study is promising however it requires a bigger study group and further evaluation.

**Keywords: Open fetal surgery, Mom PSV MCA, Fetal anemia**



## Post-dural puncture headache in obstetrics – a preliminary study

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Post-dural puncture headache (PDPH) is a common side effect of spinal anesthesia. Its overall incidence varies from 0.1-36%. There are several factors reported to increase the risk of PDPH, such as pregnancy, female gender, young age and a low BMI.

The aim of the study was to analyze population of women with PDPH after delivery and to evaluate factors predisposing to this condition.

We retrospectively analysed 88 women who gave birth in the University Hospital in Kraków between 1st January and 30th June 2017. Demographic data, past medical history as well as intrapartum data were collected.

Out of 1500 patients who gave birth during the study period, PDPH occurred in 88 women (5.9%). General characteristics of the patients were: a median age of 31, in a single pregnancy (92%), after caesarean delivery (97.7%: 77% of the caesarean sections were elective, 23% of them were emergency) at median gestational age of 38+6 weeks. 95.5% of the women received spinal anesthesia, 2 patients were submitted to epidural anesthesia and 2 were given spinal anesthesia, which had to be converted to the general one. Evaluation of BMI among the women with PDPH revealed that 8% of them were underweight (BMI<18.5), 17% - overweight (BMI 25-30), 6% - obese (BMI >30) and 69% had a normal body weight (BMI 18.5-25).

Basing on the results of the study, low BMI might be a factor predisposing to PDPH. However, in the analyzed population of women, young age did not appear to increase risk of this complication after spinal or epidural anesthesia, as most of the women suffering from PDPH were over 30 years old..

**Keywords:** post-dural puncture headache, anesthesia, obstetrics, preliminary study

## **The assessment of diagnostic value of IOTA simple rules protocol in differentiation of adnexal masses**

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Preoperative differentiation of adnexal masses determines the management and prognosis of the patient. IOTA protocol allows for a quick and noninvasive distinction between malignant and benign masses.

The aim of this study is to assess the diagnostic value of IOTA simple rules protocol (IOTA sr) in comparison with histopathological findings and RMI score.

35 women who had been admitted to the hospital due to adnexal masses were eligible for the study. The examination consisted of transvaginal ultrasonography, CA 125 test, biopsy and anamnesis. Then masses were evaluated according to IOTA sr and RMI score. The results of IOTA sr were compared with RMI score and biopsy findings.

There is a strong positive correlation between the results of IOTA sr and histopathological findings as well as CA 125 levels.

Thus, the IOTA simple rules protocol can be useful in preliminary assessment of adnexal masses and should be included in basic examination of adnexal masses.

**Keywords: IOTA, adnexal masses, ultrasonography**

## Premature birth before 32 week of pregnancy - retrospective analysis maternal factors

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According to the World Health Organization premature birth is a birth taking place between 22th and 37th week of pregnancy. Incidence of premature birth reaches 5-7% in the Europa and even 11% in the USA. In Poland this value fluctuates between 6-8%.

Purpose of our scientific research is presenting maternal factors which provoke and increase the risk of premature birth.

In our work were analysed the group of 278 patients who bear a child before 32th week of pregnancy was completed. Each woman was a patient of Academic Clinical Hospital in years 2013-2016. 51 patients of research group (18,35%), had natural childbirth; 227 patients (81,66%) ended the pregnancy by cesarean section. In this research were analysed mother's, obstetrician-gynecological and social factors provoking premature birth. There are gleaned information about infant: sex, Apgar points, weight, length.

132 patients, what represents 47,48%, are women over 30th years old; 161 patients, what is 57,90%, had body mass index (BMI)>25 kg/m<sup>2</sup>. 41,40% women are unigravidas. The most frequent indications to cesarean section were: threatened asphyxia-29,14%, premature rupture of membranes-27,70%, suspicion of placental abruption-23,38%. During the pregnancy 46,76% patients had urinary/gynecological infection, 11,87% had reduced cervix under 25 mm to 24th week, 23,38% had bleeding.

The most often factor appealing to premature birth between 24th-27th week of pregnancy was the urinary/gynecological infection which involved 35 from 65 tested women. Over 50% patients who bore child between 28th-32th week of pregnancy had BMI>25 kg/m<sup>2</sup>.

**Keywords:** premature birth, birth before 32 week of pregnancy, maternal factors

## Women's awareness of caesarean section as way to give birth

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Cesarean section has become a common way to give birth. As more woman undergo this procedure (34.6% of deliveries in Poland in 2015), it rises concerns if they are aware of possible complications and are familiar with indications for the surgery.

The aim of this study was to investigate woman's awareness of different ways of giving birth, especially C-section.

A total of 125 postpartum woman hospitalized at Gynecological Ward of UCK hospital (both with vaginal and C-section delivery) were involved. The diagnostic survey was conducted using an original questionnaire composed of 21 questions. The questionnaire was anonymous.

Among 125 woman 97 had delivered by C-section at least once, 59 of them had more than one labour. Miscarriage was noted by 31 patients. Antenatal class was attended by 64 future mothers. Signs of fetal distress were picked as the most important indication by 42.4% woman. 78.4% patients correctly pointed out that natural birth is possible after C-section. Only 72% talked with their doctor about different ways of childbirth. Internet was the number one knowledge source for 76% woman, placing gynecologist at second place. Most patients (85.6%) consider that woman's knowledge about pregnancy and ways of delivery is not sufficient and more educational measures should be applied.

Woman's knowledge about different ways to give birth is not sufficient. Patient's find hard to differentiate between complications of natural birth and C-section. More educational measures should be taken to improve general awareness about C-section.

**Keywords: Awareness, delivery, caesarean section**

## **Correlation between occurrence of depression symptoms and intensity of premenstrual syndrome disorders**

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Premenstrual Syndrome (PMS) affects a numerous group of women. Cyclically appearing somatic and mental disorders impair their daily activity in a significant extent. According to statistics, depression impacts about 7 % of female population and is regarded as a medical, personal and social issue.

The objective of our research was to assess if there is any correlation between intensity of PMS and the occurrence of depression symptoms.

The study was running from 1.01 to 28.02.18. We used the online questionnaire, including: respondent's particulars and basic gynaecological history, Beck Depression Inventory (BDI) and Premenstrual syndrome scale (PMSS). We have obtained 2786 correctly fulfilled questionnaires. Women with hormonal treating or those who have been taking birth control pills or antidepresants were excluded from the study population. Results were analysed in Statistica programme.

In the group of 1949, all of interviewed women reported PMS disorders. 40% of them are identified as patients with moderate level of symptoms (not affecting daily activity). Severe level - 30%, very severe (interfering with daily activity)- 6%. According to the BDI 58,5% of women presented a normal or insignificant depressed mood, 34% of them were affected by mild mood disturbance, 7% has a moderate level of disorders. Severe depression- in only two of them. We received the 0,53 correlation rate ( $p < 0,00$ ) in our statistical analysis for the relation that was the objective of our research.

There is a significant statistical correlation between the intensity of PMS disorders and the occurrence of depression symptoms. Severity of BDI disorders is especially connected with behavioural symptoms.

**Keywords: Premenstrual syndrome Depression**

## Determinative factors in induction of labour in obese women

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According to the WHO, obesity is one of the 21st century epidemics. The worldwide prevalence of obesity among women is estimated of more than 21% in 2025.

Assessment of maternal obesity impact on induction of labour(IOL).

A retrospective analysis of medical data of 208 women qualified for IOL between 2010 and 2015 was performed. The study group consisted of 108 women with body mass index(BMI)≥ 30 and the control group consisted of 100 women with BMI of 18.5-25.

There were no significant differences in women's age between the groups. Obese women gain less weight during pregnancy(11.9 kg vs 14.6 kg p.3; OR=2.48 pl anaesthesia(OR=11.2 and OR=20.0 pht gain didn't influence the rate of successful OIL in obese women group(OR=1; OR=1). Although in the control group it depends on weight gain during pregnancy(OR=1.1 p=0.02) but not from BMI(OR=1).

Obesity doesn't increase the rate of IOL failures.

**Keywords:** Body mass index, induction of labour, labour complications, obesity, cesarean delivery.

## **Analysis of physical activity undertaken by women during pregnancy**

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Why is physical activity important in pregnancy? Appropriately selected and safe forms of movement have an invaluable effect on both the future mother and the child. Physical activity has a positive effect on the course of the entire pregnancy, the moment of delivery. It can contribute to faster recovery after childbirth and have an impact on the milder course of puerperium.

The aim of this study was to analyze the physical activity of pregnant women according to independent variables, such as attendance at childbirth classes, education, marital and economic status.

The study covered a group of 100 pregnant women, in the range of 18 to 30 years old. The study was conducted using anonymous electronic questionnaire.

The most common physical activity undertaken by all the pregnant was walking. Then yoga and aqua aerobics. Respondents replied that physical activity has a positive effect on well-being.

The type of physical activity undertaken depends on the participation antenatal school.

**Keywords: pregnancy, women's physical activity**

## Lymphadenectomy in oncological gynecology. Is it useful?

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Lymphadenectomy is an essential part of surgical staging procedures in oncological gynecology. This procedure involves the excision of lymphoid tissue from pelvic and para aortic area. It is known that there is a clinically significant improvement of survival after systematic lymphadenectomy in patients undergoing cytoreductive surgery for advanced stage disease.

We carried out this research to evaluate frequency of lymphadenectomy in patients with ovarian cancer vs endometrial cancer. We would like to assess the influence of type of cancer and presence of metastases.

In our retrospective study we analyzed 669 medical histories of patients who were hospitalized due to ovarian and endometrial cancer since 2007 to 2017 in Clinic of Gynecology and Obstetrics in Katowice.

We have shown that pelvic lymphadenectomy was performing in majority cases of endometrial cancer (78%) and ovarian cancer (64,4%). Para aortic lymphadenectomy was more often performing in ovarian cancer compared to endometrial cancer.

The percentage of positive lymph nodes increases with the staging of ovarian and endometrial but much more significantly in ovarian cancer.

**Keywords:** Lymphadenectomy, ovarian cancer, endometrial cancer, oncological gynecology



## **An evaluation of pregnant women's knowledge about cesarean section and natural birth**

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For the last few years, a great increase in the number of cesarean sections have been observed among pregnant women in European Union. In the same time, their anxiety level becomes more and more noticeable.

The aim of this research was to evaluate the knowledge of pregnant women about c-section versus natural birth.

An anonymous questionnaire has been prepared, that was completed by 590 pregnant women in different age and economic status. Subsequently, a statistical analysis of the data was performed.

The main knowledge of the respondents narrows down to the statement that natural birth induces much faster recovery time than the c- section (70%). Nonetheless, their knowledge about c-section's restrictions affecting consecutive deliveries is insufficient. According to this, the preference of the research group concerning c-section is significantly higher than indicated by WHO. Furthermore, the majority (68%) of women that are planning to get a c-section are satisfied with that method of delivery and, what develops a great concern, most of them do not realise the possibility of complications. Approximately 65% pregnant women still do not realise the benefits of natural birth for both the baby and woman.

Pregnant women's knowledge about c-section and natural birth, in general, is very basic and fragmentary. This leads to the conclusion that still a lot of work needs to be done by medical practitioners in terms of enhancing knowledge among women in reproductive age.

**Keywords:** cesarean section, natural birth, pregnant women's knowledge, level of fear

## Differences in approach to cesarean section among primigravidas and multigravidas

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According to the newest reports published by OECD a constant increase of c-section rates has been observed. In these statistics, Poland was classified in the third position with 36,2% which was 41% more than the European average.

The aim of this survey was to compare the approach of primigravidas and multigravidas to c-section. Moreover, main causes of performing c-sections were analysed. In addition to this, the awareness of possible complications during c-section was examined in the research group.

The anonymous survey was created and 590 pregnant women answered 20 questions. The population was divided into two groups of primigravidas (43%) and multigravidas (57%). Statistical analysis of the data was conducted. The results were presented in form of graphs and tables.

Around 42% of primigravidas claims that, if they had a choice, they would choose c-section. In the same time, only 21% of multigravidas would prefer a c-section. Moreover, as much as 44% of primigravidas admit having c-section despite no medical indications. There are statistically significant differences between primigravidas and multigravidas in terms of c-section performances' causes.

A vast majority of primigravidas have c-section with no indication and its greatest reason is the huge fear accompanying such as an unknown event for them as natural childbirth. On the contrary, more multigravidas realise the benefits of the natural childbirth. Summing up, an educational action should be enhanced among young mothers-to-be, especially aiming at familiarising them with the natural birth experience.

**Keywords: cesarean section, booked cesarean, knowledge level of complication, anxiety factors**

## Evaluation of pregnancy outcomes at advanced maternal age

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Advanced maternal age at childbirth has been associated with adverse outcomes. The issue of perinatal outcomes among older patients seems to be of utmost importance.

The objective of this study was to compare maternal, perinatal and neonatal outcomes depending on maternal age and parity.

We retrospectively analysed 950 women who gave birth in the University Hospital in Kraków during a six-month period. The patients were divided into 3 groups according to their age (30-34 years old, 35-39 years old and over 40 years old). Each of these groups was subsequently subdivided into 2 groups depending on parity (primiparae and multiparae). Perinatal outcomes were compared between the groups and the subgroups.

Comparison of the 3 age groups revealed that advanced maternal age may constitute a predisposing factor for preterm birth, caesarean section (both emergency and elective) and large for gestational age (LGA). From these parameters, statistical significance was reached in case of an increased risk of LGA (OR=2.17), caesarean section (OR=2.03) and elective C-section (OR=1.84) in women over 40 years old when compared to the patients aged 30-34. At the same time, older women had a lower risk of small for gestational age (SGA), birth asphyxia as well as lack of progress in labour. Additionally, there is a negative correlation between maternal age and gestational age at delivery ( $R = -0.0949$ ,  $p < 0.05$ ).

Advanced maternal age can undoubtedly be associated with several adverse perinatal outcomes. Therefore, obstetricians should be especially cautious for adverse effects in this group of patients.

**Keywords: advanced maternal age, pregnancy, adverse perinatal outcomes, large for gestational age, delayed childbearing**

## Breast screening behaviours among young women with benign breast lesions

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The overall incidence of benign breast lesions among young women has increased over last years. Early screening tests and diagnosis include clinical breast examination, breast ultrasound and biopsy.

The main purpose of the study was to evaluate the impact of benign breast disease diagnosis among young women on their diagnostic behaviour.

The study based on a cross-sectional surveys. The original, previously validated questionnaire was used. Population of 1226 female students from Medical University of Silesia, Faculty of Medicine (years I-V) were enrolled in the study.

The fully completed questionnaires were obtained from 760 students (response rate 62,0%), aged  $22,3 \pm 1,9$  years. Benign breast lesions were declared by 7,5% of respondents. Women with benign breast lesions more often performed breast self-examination (89,5% vs. 65,5%;  $p < 0,0001$ ). Also they were performed a breast ultrasound more likely than overall population (93% vs. 27,5%;  $p < 0,0001$ ). Women with benign breast lesions had a clinical breast examination more often than women without any lesions (87,7% vs. 48,9%;  $p < 0,0001$ ). Clinical breast examination among women with benign breast lesions was performed by gynecologists in 70,2% (OR=2,89 95%CI: 1,6-5,2;  $p = 0,0002$ ), by surgeons in 33,0% (OR=25,6 95%CI: 11,8-55,7;  $p < 0,0001$ ).

Women with benign breast lesions more often performed breast self-examination than overall population.

**Keywords: benign breast lesions, young women, screening behaviour, self-examination, breast ultrasound**

## **Analysis of various ways of travail alleviation based on women's experience**

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The act of giving birth is one of the most significant moments in almost every woman's life. Most of them give birth in a natural way. In the past it was believed that pain was an inherent part of labour, but since analgetics have been used more commonly, feeling pain during childbirth might no longer be necessary.

The purpose of the study was to analyse various methods applied to alleviate the travail along with the women's consciousness of relieving this kind of pain.

The study included 100 women who had natural childbirth between years 2012 and 2017. We reached the patients through an internet survey. A particular attention was paid to the experience of travail after the use of different ways of pain alleviation. Moreover, we focused on the participants' knowledge about analgesia and their influence on choosing a suitable way of relieving the pain.

In the studied group the average pain was 8,17 (scale 1-10), the average sensation of travail after using both non-pharmacological and pharmacological analgesia was 8,09 out of 32% of women. The lowest level of pain was noticed in the group of patients who were given epidural anaesthesia (7,81 out of 16% of women). Surprisingly, only 30% of responders claim they attended childbirth classes. Most of participants learnt about analgesia from medical sources (69%). The least popular means of analgesia are the alternative ones like TENS or acupuncture (7%).

Still very few women are given drugs to relieve the travail, especially epidural anaesthesia. However, the best way of pain alleviation seems to be mixed analgesia. That's why appropriate education is crucial.

**Keywords: Natural labor, travail, pain alleviation, consciousness and education**

## Labour induction - what to choose?

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Labour induction is a kind of treatment, which involves artificial stimulation of mechanisms triggering labour before its natural, spontaneous beginning. This particular procedure is commonly used in modern obstetrics. There is a plethora of pharmaceutical as well as non-pharmaceutical methods employed in labour induction such as oxytocin and misoprostol. That said, there is a confusing lack of consensus on which of these medications achieves the superior results.

The primary aim of our research is to solve the problem troubling many a gynaecologist and decide which of the mentioned medications is the optimal one in the vast majority of cases.

Patients subjected to analysis, whose infants were born between 2016 and 2018, were divided into 2 groups: the first one induced by oxytocin, the second – by misoprostol. Medical records of mothers and neonates, including the total amount of pregnancies and labours, infants' anthropometrical measurements and, finally, the Apgar score, were taken into consideration.

**Keywords: oxytocin, prostaglandin, labour, induction**

## Vitamin-mineral supplementation of pregnant women

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Pregnancy is a period of special demand for minerals and vitamins. This is important for proper fetal development as well as for the mother's health. Deficiencies in these components may consequently lead to abnormal fetal growth.

The aim of the study was to evaluate the use of vitamin and mineral preparations by pregnant women and their knowledge about supplements.

The study included women aged 24 to 40 years, with secondary or higher education. The level of knowledge and information on the use of preparations were verified via an original questionnaire.

A large percentage was constituted by women in the first pregnancy, and the majority of all respondents were in the third trimester. More than a half declared a change in the way of eating, with a more frequent consumption of fruits and vegetables being put in the first place. Doctors and pharmacists are the main sources of women's knowledge about dietary supplements. Most of the respondents preferred taking vitamin and mineral complexes to single-ingredient preparations. Over 90% knew in which trimester of pregnancy vitamin B9 is the most important and the system for which it is crucial. Among minerals, women most often reached for iron and magnesium, while the least frequently supplemented component was calcium.

Women showed different levels of knowledge about each vitamin and mineral. This shows that the problem of ignorance of their functions in the body still remains. Therefore, the prevention of supplements in pregnancy seems justified.

**Keywords: pregnancy supplements, dietary supplements, vitamins and minerals**

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**INTERNATIONAL MEDICAL CONGRESS OF SILESIA**

# **SESSION OF INTERNAL MEDICINE**



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## Does chronic obstructive pulmonary disease impact platelet count? Pilot study

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Chronic obstructive pulmonary disease (COPD) is often accompanied by poliglobulia and increased haemoglobin level. It was proven on a murine model that maturation of platelets may occur partially in the lungs. If this is transferred to humans it may suggest that chronic lung diseases, may have a significant clinical consequences.

The aim of our study was to check whether there are differences in platelet count in COPD patients' when compared to well-matched control group.

The study group included 44 COPD patients aged  $66.5 \pm 5.5$  years with diagnosed COPD. The control group included 48 patients age ( $62.2 \pm 6.6$  years) and sex matched. The groups were similar in terms of potential risk factors that might have affected platelet count. The study was carried out by a retrospective method. Analysis of the blood counts results included patients admitted to the UCK in Katowice.

There were no significant differences in platelet count (PLT in studied and control group respectively  $p=0,71$ ) The statistical analysis showed significant higher values of hemoglobin (HB), hematocrit (HCT), red (RDW) and white blood cell (WBC) values in the study group. The number of platelets showed a significant correlation with HB ( $r = -0.57$ ,  $p < 0.001$ ), HCT ( $r = -0.40$ ,  $p = 0.006$ ) and RDW ( $r = -0.51$ ,  $p < 0.001$ ) only in the study group.

The analysis showed an increase in basic haemoglobin and red cells count, however, no significant difference in the number of plaques between the test and control groups was observed. To rule out potential impact of COPD on platelet count, requires confirmation in a prospective study.

**Keywords: chronic obstructive pulmonary disease, platelet count**

## **Assessment of the hormonal profile in women suffering from Polycystic Ovary Syndrome (PCOS) and Congenital Adrenal Hyperplasia (CAH)**

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Polycystic Ovary Syndrome (PCOS) and Congenital Adrenal Hyperplasia (CAH) belong to the most common disorders found in patients of gynecological endocrinology, in which patients suffer from excessive secretion of androgens resulting in masculinization, defeminization, and metabolic disorders.

The study aimed to compare hormonal profile in women with Polycystic Ovary Syndrome (PCOS) and Congenital Adrenal Hyperplasia (CAH).

The study included women aged 18-40 years, 56 women with Polycystic Ovary Syndrome (PCOS), 20 women with congenital adrenal hyperplasia (CAH) and 20 healthy controls. All participants had laboratory assessment performed.

Study results indicate that patients suffering from CAH have higher levels of testosterone, androstenedione, 17-hydroxyprogesterone in comparison to women with PCOS and control group.

Hormone profile in women with CAH is different from hormone profile in women with PCOS and healthy group.

**Keywords: Polycystic Ovary Syndrome (PCOS), Congenital Adrenal Hyperplasia (CAH), hormonal profile**

## Female fertility assessment in endocrine and gynecological diseases

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Polycystic Ovary Syndrome (PCOS) and Congenital Adrenal Hyperplasia (CAH) belong to the most common disorders found in patients of gynecological endocrinology, in which patients suffer from excessive secretion of androgens resulting in masculinization, defeminization, and metabolic disorders. Moreover, women suffering from PCOS and CAH have irregular menstrual cycles.

The study aimed to compare fertility in women with PCOS and CAH.

The study included women aged 18-40 years, 56 women with Polycystic Ovary Syndrome (PCOS), 20 women with Congenital Adrenal Hyperplasia (CAH) and 20 healthy controls. All participants presented their past medical history and had laboratory assessment performed.

Study results indicate that patients with PCOS more often suffer from irregular menstrual cycles in comparison to the patients with CAH and the control group.

Author found that female fertility is highly correlated with the levels of specific hormones.

**Keywords: female fertility, Polycystic Ovary Syndrome (PCOS), Congenital Adrenal Hyperplasia (CAH)**

## **Do gravidas from Upper Silesia with risk factors of Gestational Diabetes Mellitus (GDM) realise the danger of that disease?**

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3-10% of pregnant women may fall down with Gestational Diabetes Mellitus (GDM). This disease may influence the mother and the unborn child as well. According to guidelines, each pregnant women should have blood glucose test performed. However, the awareness of the disease among gravidas is quite poor.

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

In our study took part 132 women which were hospitalized after the delivery in the obstetrician ward in Tarnowskie Góry (Poland). Women were surveyed with the Gestational Diabetes Mellitus Knowledge Questionnaire (GDMKQ, Hussain Z et al.). Medical history and anthropometric data were also collected and all data was analyzed in Statistica 12.5 programme.

Mean age of women participating in our research was  $33,2 \pm 4,8$ . Their mean declared BMI before pregnancy was  $23,4 \pm 4,5$ . Seven of them suffered from GDM, however 118 (89,4%) of them presented at least one risk factor for this illness. Average score of GDMKQ was  $9,8 \pm 3,6/15$  points (65,3%). Women had the worst knowledge when asking about risk factors, but they do have awareness of bases of that disease. Woman with higher education gained significantly more points than woman who finished just primary school ( $p < 0,05$ , ANOVA Kruskal-Wallis Test).

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

**Keywords:** gestational diabetes mellitus, pregnancy, knowledge

## **Do the serum levels of FGF21 and chemerin have an influence on complications during intrahepatic cholestasis of pregnancy?**

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Intrahepatic cholestasis of pregnancy is the most common liver disease in pregnancy. Although it does not present a direct threat to the mother's life, it is associated with the possibility of chronic placental insufficiency.

Considering the wide range of adipokines and hepatokines activities it seems that they may influence cholestasis pathogenesis and fetal biometric parameters.

Thirty pregnant women with intrahepatic cholestasis (PWC), 20 women with uncomplicated pregnancies (PWU) and 20 healthy women without pregnancy (HW) were included. Serum chemerin and fibroblast growth factor 21 (FGF21) concentrations were measured with enzyme-linked immunosorbent assay. Additionally ultrasound fetal biometric parameters were carried out.

Serum chemerin levels significantly increased during pregnancy and were higher in PWC compared to PWU and HW ( $133.4 \pm 50.2$  vs.  $102.0 \pm 10.2$  vs.  $55.3 \pm 44.8$  ng/ml;  $p=0.04$  and  $p=0.005$  respectively). The difference was also significant when compared PWU to HW ( $p<0.05$ ). Serum FGF21 levels were significantly higher in PWC than in PWU ( $2.63 \pm 5.46$  vs.  $0.16 \pm 0.09$  p=0.03). There was a positive correlation between serum chemerin and glucose concentration ( $r=0.73$ ,  $p=0.01$ ) and biparietal diameter ( $r=0.71$ ,  $p=0.04$ ) and estimated fetal weight measurements ( $r=0.75$ ,  $p=0.04$ ).

The results indicate that serum chemerin levels was up-regulated in pregnancy, with further significant increase in intrahepatic cholestasis. Serum chemerin was positively associated with some fetal biometric parameters. FGF21 significantly increased in pregnant women with intrahepatic cholestasis compared to healthy pregnant.

**Keywords: intrahepatic cholestasis of pregnancy, chemerin, FGF21, adipokines**

## **Genetic variability in apolipoprotein E (ApoE) concentration in association with metabolic disorders prevalence and age among Upper-Silesian population**

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Apolipoprotein E (ApoE) is a hydrophilic component of such lipoproteins as HDL, VLDL and chylomicrons that play role in metabolism. ApoE is coded by 2 genes which combinations give a genotype combined of 3 isoforms. The genotypes  $\epsilon 3/\epsilon 4$  and  $\epsilon 4/\epsilon 4$  prevalence is associated with the risk of metabolic diseases but also Alzheimer's Disease. The evaluation of unfavourable genotype frequency in Upper-Silesian population, which equals predisposition to develop those diseases, is crucial to prevent them.

Evaluation of polymorphism ApoE (rs 429385 and rs7412) influence on metabolic diseases prevalence in correlation with age and in examined population of Upper Silesia Agglomeration.

The genotyping of ApoE polymorphism was conducted using Roche lightcycler 96 device and ready-to-use assay kits for single nucleotide polymorphism - TaqMan Pre-designed SNP Genotyping Assay (Applied Biosystems), then analysed with use of statistical tests. The study included 371 patients inhabiting Upper Silesia Agglomeration.

In the study group most of patients had the genotype  $\epsilon 3/\epsilon 3$  (n=222, 59.84%). 24.45% (n=87) had genotype  $\epsilon 3/\epsilon 4$ . Only 0.54% of them had genotype  $\epsilon 4/\epsilon 4$  (n=2). 25.34% of patients had one  $\epsilon 4$  allele (n=94). The assessment of association between genotype and metabolic disorders was performed.

The most common genotype of ApoE among population of Upper Silesian Agglomeration was  $\epsilon 3/\epsilon 3$  (n=222, 59.84%), which is comparable with literature informations. There is an association between the genotype of ApoE and risk of developing metabolic disorders, which are crucial for patients health and quality of life.

**Keywords: ApoE, ApoE polymorphism, metabolic disorders**

## **Adverse outcomes of natraemia and creatininemia in elderly hospitalized population**

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Preserve proper renal function and serum electrolytes concentration is essential to maintain correct homeostasis.

Searching markers which do not require large financial outlay in terms of mortality among elderly population with comorbidity.

Among people hospitalized in one calendar year in the Department of Internal Medicine in Bytom, the study covered 108 patients who died during hospitalization. Inclusion criteria: deaths during hospitalization caused by cancers, circulatory insufficiency, kidney failure, advanced electrolyte disorders. Exclusion criteria: deaths caused by poisoning and suicides. Analyzed group contained seniors (65=on of sodium were observed in seniors who died during hospitalization vs seniors who survived.

Despite significant improvement of diagnostic and treatment possibilities, electrolyte disorders and renal function are still important factor of mortality in the elderly in department of internal medicine.

**Keywords: elderly patients, natraemia, creatininemia, renal function, electrolyte disturbances**



## Assessment of Health-Related Quality of Life in IBD Patients and Its Relation to Severity of the Disease

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The aim to investigate how the quality of life depends on IBD and severity of ulcerative colitis (UC) and Crohn's disease (CD).

Mental and physical health was assessed in IBD patients and healthy volunteers (HV) with self-administered SF-36v2 Health Survey. Severity of CD was assessed with Crohn's Disease Activity Index (CDAI) and of UC with MAYO score.

The study included 260 patients (62% women and 38% men), 197 with IBD (67 - UC, 130 - CD) and HV as control group (n=63). All groups were similar with reference to age and BMI; in UC 36.4±11.5 yrs, 25.5±17.5 kg/m<sup>2</sup>, in CD 35.1±12.1 yrs, 22.3±9.6 kg/m<sup>2</sup> and in controls 38.1±16.3 yrs, 23.4±3.4 kg/m<sup>2</sup>. Both the Physical Component Summary (PCS) and Mental Component Summary (MCS) were significantly lower in patients with UC (41.1±7.5), pening of quality of life in both the physical and the mental domain.

Activity of UC affects mainly physical component whereas CD impacts physical and mental constituents.

**Keywords:** IBD; CD; UC; colitis; Crohn's; SF-36; quality; life; MAYO; CDAI; activity; severity; gastroenterology

## Asthma and COPD patients - gender differences and its association with dyspnea

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Females tend to be described as more dyspneic than males.

The aim of the study was to assess gender differences in dyspnea perception in patients with asthma and COPD.

Subjects were 61 men (M) and 69 women (W) aged 40-69 years (M:59.1±6.2 years; W:58.3±7.2 years; p=0.5). Asthma was diagnosed in 75 subjects (M:28; W: 47), COPD in 46 subjects (M:27; W:19) an overlap in 9 subjects (M:6; W:3). Perception of dyspnea was assessed using various scales: MRC, BTS, VAS, NYHA and ATS and analyzed based on previous expected dyspnea determinants.

Both sexes did not differ in the level of dyspnea perception: MRC -M:1.77±1.51 U, W: 1.91±1.49 U (p=0.5); VAS-M: 3.00±2.58 U, W: 3.33±2.88 U (p=0.6), however there were significant differences between men and women in pulmonary function tests results: FVC% (M: 76.3±26.3, W: 90.9±21.1; p=0.0004), FEV1% (M: 61.0±27.0, W: 74.8±26.9; p=0.006), FEV1/FVC% (M: 61.4±15.7, W: 68.4±15.2; p=0.01), smoking status (current smokers – M: 24.5%,W: 11.5%; p=0.002), educational level (university diploma – M: 7.1%, 30.1%; p=0.009) and BMI (M: 31.4±7.4 kg/m<sup>2</sup>, W: 27.7±5.8 kg/m<sup>2</sup>; p=0.001). Gender was a statistically significant determinant of dyspnea assessed using MRC scale (p=0.002), BTS scale (p=0.05), NYHA scale (p=0.03), ATS scale (p=0.05) but not for VAS scale (p=0.4). Separate sets of multivariate analyses showed different correlates of dyspnea score for: MRC (M: DGN, FEV1%, SatO<sub>2</sub>; W: SatO<sub>2</sub>), BTS (M: DGN, FEV1%; W: BMI); VAS (M: FEV1%; W: SatO<sub>2</sub>), NYHA (M: DGN, FEV1%; W: BMI), ATS (M: DGN, FEV1%; W:-).

There are gender specific dyspnea determinants in asthma and COPD patients. Women seem to be more susceptible to dyspnea sensation.

**Keywords:** dyspnea, gender, asthma, copd

## Laboratory presentation of patients with *Clostridium difficile* infection

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*Clostridium difficile* infection (CDI) has emerged as one of the most common causes of the healthcare-associated infection in the hospitals.

The aim of the study is to determine if there are any differences that exist among laboratory parameters on admission in the patients infected in hospital by *C. difficile* positive for toxins (A and B) and those who were negative for toxins.

This is a retrospective cohort study conducted in a Department of Internal Ward. We reviewed charts of the patients with CDI between January 2016 and December 2017. Fecal specimens were detected for both *C. difficile* glutamate dehydrogenase (GDH) antigen as well as toxins A and B. This study included 83 adults who developed diarrhea during hospitalization, 55 with a positive fecal test for CDI with toxins A and B (Pos group) and 28 CDI who were negative for toxins (Neg group). Statistical analysis was performed with Statistica for Windows 13.0.

Baseline demographic and underlying illnesses were similar in both groups. CRP concentration was statistically comparable in the investigated groups, however there was tendency to have higher CRP concentration in the Pos group (91,5 mg/l vs 63,3 mg/l  $p=0,062$ ). The Pos group had significantly higher white blood cell counts ( $p<0,05$ ) with higher neutrophil count ( $p=0,005$ ) and lower lymphocytes count ( $p<0,05$ ). Moreover the Pos group had lower Na concentration ( $p<0,05$ ).

These data suggest that patients infected with negative strain of *C. difficile* present less severe laboratory and clinical features than patients infected with *C. difficile* positive for toxins.

**Keywords:** *Clostridium difficile*

## Complications and comorbidities in patients with diffuse systemic sclerosis

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Systemic sclerosis (SSc) is a chronic connective tissue disease of unknown etiology and progressive course which development is associated with immune disturbances, vascular changes, as well as the skin and internal organs fibrosis. The disease has multisystem nature and rich symptomatology.

The purpose of this work was to analyze accompanying diseases and complications in patients with SSc.

Medical records of 141 patients treated at the Department of Internal Medicine and Rheumatology of the Medical University of Silesia in 2003-2017 were investigated. The diffuse form of SSc was diagnosed in the patients based on EULAR/ACR criteria 1980/2013.

The group of patients included 109 women (77.3%) and 32 men (22.7%). The average age of patients was 43 yr (28-80). Symptoms and signs that were the basis for diagnosis of complications and comorbidities were found in almost all investigated patients. The unambiguous determination of whether a specific alteration had a causal relationship with SSc and therefore was complication or it was an independent comorbid disease was not always possible. The most common accompanying diseases were: cardiac arrhythmias (25.5%), valvular defects (17.0%), osteoarthritis (16.4%), diabetes mellitus (10.0%), cholelithiasis (9.9%), osteoporosis (9.3%) and thyroid goiter (8.6%).

Involvement of almost all systems and organs in patients with SSc significantly increases the likelihood of complications and may contribute to development of comorbidities. Comorbidity aggravates the course of SSc and enhances mortality. Understanding of these phenomena is important for management of patients with SSc.

**Keywords: systemic sclerosis comorbidity complication**

## Is it possible to predict the inflammatory bowel diseases (IBDs) course?

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Clinical manifestations of IBDs (Crohn's disease - CD, ulcerative colitis - CU) can range from mild symptoms to aggressive, disabling disorder. Markers of the severe disease course have been studied previously, but results are not always compatible with clinical practice. The confirmation of their importance and early identification may be helpful in implementing adequate therapeutic options.

The aim of this study was to investigate specific factors that may be useful in predicting the course of IBDs.

We carried out a study of 102 patients with CU and 100 with CD (106 women and 96 men) who were admitted to the Department of Gastroenterology. We considered different medical records including applied treatment, colonoscopic findings and laboratory test results. The data were analysed using Statistica 13 software.

The median disease duration at the time of assessment was 10 years (IQR= 7-14). In case of CU: female sex was connected with higher frequency of exacerbations ( $P<0,02$ ) and need for corticosteroids to induce remission ( $OR=4,29$ ). Extensive disease in colonoscopy increased the probability of biological treatment ( $P=0,03$ ). In case of CD positive family history was associated with higher chance of extraintestinal manifestations during the disease course ( $P<0,04$ ). Need for corticosteroids to induce remission was correlated with extensive disease ( $P<0,01$ ), higher CRP concentration ( $P<0,01$ ) and lower haemoglobin level ( $P=0,01$ ).

There is a great number of factors that allow to expect serious course of IBDs. Some of them are connected with early complications other with later ones. Additional studies are needed to confirm strength of their modifying impact.

**Keywords: IBDs, predictors of outcome, prognostic factors**

## **Sirolimus and its influence on lipid profile of lung transplant recipients - a pilot study**

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Sirolimus (mechanistic target of rapamycin inhibitor) is known for its unique mechanism of action and its ability to synergize with other drugs used in transplantology. It also entails a number of side effects.

The aim of the study was to assess the influence of sirolimus therapy on the lipid parameters including total cholesterol (TC), HDL- cholesterol, triglycerides (TG) among lung transplant recipients.

The group of patients consisted of 16 people (7 women, 9 men, average age: 41,9 years) who underwent lung transplantation in Silesian Center for Heart Diseases (SCCS) between 2013 and 2017. 9 patients were treated with sirolimus and the remaining 7 received mycophenolate mofetil (MM). The dose of steroids and cyclosporine serum levels were comparable among entire group of patients.

In the group of patients treated with sirolimus, the mean HDL-cholesterol level increased by 0,07%. Patients on MM noted such increase of 84,81%. Total cholesterol level decreased by 9,89% among patients treated with sirolimus. Patients on MM noted the increase in such parameter of 3,01%. Patients treated with sirolimus had their TG level decreased by 22,42 % on average, yet more significant decrease was noted among MM patients (33,27%). Among male patients treated with Sirolimus, the mean decrease of the TC was 14,32%. Male lung recipients on MM noted the increase of 8,53%.

Sirolimus treatment has an influence the lipid parameters among lung transplant recipients. Authors are aware of this works limitations due to small group and are encouraged to expand the research on a larger study group.

**Keywords: Lung transplantation, sirolimus, lipid parameters**

## **Prevalence of Irritable Bowel Syndrome (IBS) amongst medical students and its relationship with the learning system. Comparison between Rome III and Rome IV Diagnostic Criteria**

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IBS affects around 10% of population. It manifests itself as a recurrent abdominal pain and changes in bowel habits. The field of the study is dependence of IBS and psychiatric disorders.

Aims of study: 1.Evaluation of IBS prevalence and influence of stress, lifestyle, diet and environmental factors on frequency and intensity of IBS symptoms with medical students. 2.Comparison of IBS incidence based on using Rome III and IV Diagnostic Criteria.

A questionnaire which consisted of questions about lifestyle, diet, stress factors and Rome III as well as Rome IV Diagnostic Criteria for IBS diagnosis was applied. Questionnaires were distributed to medical students. Analysis of the data was performed using Statistica 13. Coexistence of IBS and depression was evaluated using Beck Depression Scale.

262 completed questionnaires were received. Prevalence of IBS based on Rome III Criteria was 25.95% and based on Rome IV Criteria-19.08%. Findings based on Rome IV Criteria revealed a greater group of students affected by depression than using Rome III Criteria. There was a significant relationship between prevalence of IBS, female sex and severity of depression. Relationship between year of studies, diet and environmental factors was not observed.

1.Female sex and presence of depression had the greatest influence on IBS occurrence. 2.Rome IV Criteria have selected the group with a higher frequency of psychiatric disorders occurrence. 3.Because of strong connection between depression and IBS occurrence (56% based on Rome IV Criteria), antidepressants should be considered as a part of IBS treatment.

**Keywords: Irritable Bowel Syndrome; IBS; Rome III Diagnostic Criteria; Rome IV Diagnostic Criteria; Depression**

## **Expectations and quality of life in patients with idiopathic pulmonary fibrosis in Poland before antifibrotic treatment**

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Idiopathic pulmonary fibrosis (IPF) is a chronic progressive disease with poor prognosis.

The aim of this study was to describe patients' expectations of treatment and its relation to quality of life and stage in GAP Index.

Answers were assessed by an original survey – patients were asked to choose 3 most important issues out of 15 mentioned. Quality of life was assessed by Short Form-36 Health Survey.

A group of 40 patients, with median age of 72 years, has been qualified for treatment. Thirty one had stage I in GAP index, 9 others stage II. Patients' expectations were following: good access to antifibrotic treatment (60%), extension of life regardless its quality (42%), good access to reference centers of IPF as well as maintenance of independence (both 39%). The expectations differed according to the stage of the disease - patients with stage GAP 2 preferred to have good access to reference centers of IPF contrary to those in Elary stage (GAP 1), for whom prolonging life, regardless its quality, was most crucial. In terms of the SF-36 questionnaire, patients with stage I in GAP index had greater score, although not statistically significant, in their physical functioning (PF; 43,58 vs. 34,96) and the role of limitations due to physical problems (RP; 39,1 vs. 29,31), than patients in stage II group. The mean scores in Mental Health domains showed no significant differences between these groups.

In conclusion, most of IPF patients expected a lot from pirfenidone treatment, regardless of side effects and proven results of such therapy. Our study highlights differences in expectations before treatment depending on stage of IPF.

**Keywords: idiopathic pulmonary fibrosis (IPF), pirfenidone, GAP Index, SF-36, expectations, quality of life, treatment**



## **Concentration of vitamin B 12 and vitamin D and cognitive state and macrocytosis in geriatric patients**

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Deficiencies of B12 and D vitamins are common in elderly patients. The result may be neurological and hematological disorders.

Demonstration of the relationship between vitamin B12 (B12) and vitamin D (D) levels and cognitive status and macrocytosis in geriatric patients. Analysis of the influence of using proton pump inhibitors (PPI), metformin (MF), B12 and D supplementation (SB12, SD) on the parameters tested.

This retrospective study is based on analysis of medical records of 304 patients of the Geriatrics Department. The following data was analysed: B12 and D concentrations, MMSE, nosological diagnoses, Clock-Drawing Test (CDT), Geriatric Depression Scale (GDS), age, sex, MCV, Hb, folic acid (FA), use of PPI, MF, SB12, SD.

B12 deficiency occurred in 9.21% of patients and D deficiency in 73%. There were no significant relationships between the level of both vitamins, the cognitive level and the type of dementia,  $p > 0.05$ . Only women had a relationship between B12 concentration and GDS ( $p = 0.041$ ). There was no relationship between D concentration and GDS. The concentration of B12 did not correlate with Hb or MCV ( $p > 0.05$ ). There was a dependence of D and Hb concentration: among men  $p = 0.011$ , among women  $p > 0.05$ . The concentration of FA correlated only with Hb,  $p = 0.001$ . Hb and MCV differed among patients taking combined PPI and MF compared to non-medicated patients,  $p < 0.05$ . SB12 and SD increased their concentrations, for both  $p < 0.05$ .

The deficiency of B12 or D has no direct relationship with the cognitive status or macrocytosis. GDS correlates with B12 deficiency among women and does not correlate with D levels at all. The combined use of IPP and MF reduces Hb and MCV. The correlation between D and Hb levels is differentiated by gender.

**Keywords: Vitamin B 12, Vitamin D, cognitive state, macrocytosis, GDS, geriatric patients, PPI, metformin**

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INTERNATIONAL MEDICAL CONGRESS OF SILESIA

# SESSION OF INVASIVE CARDIOLOGY AND CARDIOTHORACIC SURGERY

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## **Safety and effectiveness of transcatheter aortic valve implantation (TAVI) in patients with bicuspid aortic valve stenosis. First and second generation devices, outcome comparison**

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Transcatheter aortic valve implantation (TAVI) is an approved and recommended treatment of aortic stenosis (AS) in high-risk patients, ineligible for a traditional surgery. Bicuspid aortic valve (BAV) is the most common congenital and acquired defect of aortic valve. Although BAV is a relative contraindication for TAVI in current ESC guidelines, cases of successful TAVI in a BAV stenosis have been reported.

The first aim of this research is to assess safety, as well as short (30 days follow-up) and long (1 year follow-up) term outcomes of TAVI in bicuspid AS. The second aim is to compare outcomes in patients with first generation (1G) and second generation (2G) TAVI devices.

This is a one-center prospective analysis of following bicuspid patients with AS, undergoing TAVI in 2010-2017 in Górnośląskie Centrum Medyczne in Katowice. Patients are enrolled to the study due to BAV diagnosed in transthoracic echocardiography and heart CT. We divide patients on treated with 1G and 2G TAVI devices. The safety is assessed according to VARC-2 definition.

From all patients treated with TAVI, 64 fulfill the criteria of BAV (32 females, 32 males, in age  $75,6 \pm 7,3$ , STS 3,8% 95% CI 3,1-4,4). Primary endpoint is observed in 5 patients (7,8%), all during the hospitalization, secondary is observed in 4 (6,8%). Patients treated with 1G devices suffer more adverse events at 30 day follow-up (12,5% vs 6,3% HR=1,98), at 1 year follow-up the risk is equal in both groups (6,25% vs 6,25% HR=1). TAVI is a safe method of treatment of BAV patients, in a short and long-term observation. 2G of TAVI devices appear to be safer and have better outcome.

This research can be extended by comparing outcomes of TAVI in both bicuspid and tricuspid AS.

**Keywords:** transcatheter aortic valve implantation, TAVI, bicuspid, aortic valve stenosis, first generation, second generation

## Efficiency of percutaneous patent foramen ovale closure using the Hyperion PFO Occluder

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Patent Foramen Ovale (PFO) is a risk factor of paradoxical embolism event (EE). Transcatheter closure with Hyperion PFO device is one of the treatment methods in secondary prevention of EE. Studies about applying Hyperion PFO device in such circumstances are limited.

To analyse clinical data and mid-term outcomes of patients (pts) after cryptogenic EE who underwent transcatheter PFO closure with Hyperion PFO Occluder.

84 pts ( $40,67 \pm 10,91$  years; median 41 years; 46 female, 38 male) with cryptogenic EE had PFO percutaneously closed between 2014 and 2017 in our Institution. Neurological indications for PFO closure included: ischemic stroke (60 pts), TIA (17 pts), migraine with aura (4 pts). Transcranial Doppler (TCD) was performed in all pts with MES >III degree. Follow up was performed 3, 6, 12 months after the procedure. 3 pts also underwent percutaneous closure of ASD II.

Following devices were used: PFO Hyperion Occluder 10 mm (1 pt), 12 mm (1 pt), 18 mm (2 pts), 20 mm (2 pts), 24 mm (64 pts), 30 mm (12 pts) and 34 mm (2 pts). Fluoroscopy time was 2,3 (0,9-7) min. Implantation was successful in all cases and no procedure related complications were observed. During follow-up no neurological events were recognized in any pts (except 1 pt with migraine attack). TCD results were available in 66 pts (18 were lost from follow up). 67 pts had complete PFO closure and 17 pts had residual shunt. In 1 pt paroxysmal atrial fibrillation was observed.

Transcatheter PFO closure with Hyperion PFO Occluder is safe and effective procedure however, randomized research with other devices and extended follow up are required.

**Keywords:** patent foramen ovale, percutaneous closure, paradoxical embolism event

## Transcatheter closure of atrial septal defect (ASD) in patients above 50 years old

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According to guidelines transcatheter closure of ASD is considered a method of choice in closure of hemodynamically significant ASDs. Scientific studies regarding ASD closure in elderly population are limited and based on small groups of patients.

The aim of the study was to evaluate short- and midterm outcomes, safety and efficiency of transcatheter ASD closure in patients above 50 years old performed in our institution.

Group of 76 (59 women) with hemodynamically significant ASD, who underwent effective transcatheter ASD closure in one tertiary center between 2015 and 2017 were included. Patients were divided into 2 subgroups: 38 patients over 50 years old and 38 patients between 18 and 50 years old. Indications for the procedure were hemodynamically significant ASD with right ventricle dilatation. The procedure was performed using following devices: Hyperion, Cocoon, Heart, Cera, Figulla and Amplatzer. Pre- and post-procedural echocardiography results were analysed. Follow-up concerning quality of life after the procedure was performed.

There were 76 performed procedures, 74 procedures were successful (in 2 cases the procedure was discontinued). The average diameter of the defect in transesophageal echo (TEE) in patients over 50 years was  $17,39 \pm 5,4$  mm and in patients under this age  $17,01 \pm 6,15$  mm. The average fluoroscopy time was  $4,563 \pm 2,794$  min and  $4,21 \pm 2,3$  min, respectively. Improvement in quality of life was observed. Complications among patients above 50 years old included: atrial fibrillation (n=1), cardiac tamponade (n=1).

Percutaneous ASD closure can be performed safely in patients above 50 years of age with low risk of complication during and after the procedure.

**Keywords:** Atrial septal defect, percutaneous closure

## **Comparison of clinical and procedural outcomes with Medtronic Corevalve (CV) and Evolut R (ER) in patients after transcatheter aortic valve implantation (TAVI)**

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TAVI is an effective treatment option for high-risk patients with aortic stenosis. The evolution of the procedure was possible due to various technical improvements, leading to better periprocedural and long-term outcomes.

The aim of this study is to assess the safety and efficacy of the Medtronic Evolut R device compared with the former-generation CoreValve. Main endpoints include periprocedural outcomes, pacemaker implantation and mortality.

This study concerns TAVI procedures performed in the SCCS in Zabrze between 2011 and 2017. We respectively analysed 124 patients and divided them in groups: I (79 patients treated with CV) and II (45 patients with ER).

Angiography and echocardiography after TAVI showed significantly higher rates of paravalvular leak in patients with CV (angiography: 59,49% CV vs 37,78% ER;  $p=0,02$ ; echocardiography: 58,23% CV vs 28,89% ER;  $p=0.0017$ ). Vascular complications were stronger associated with group I (15,17% ; group II : 2.22%;  $p=0,037$ ). No significant differences were seen in the pacemaker implantations (group I: 18,99%; group II: 6,67%;  $p=0,061$ ) and periprocedural and 30-days mortality ( $p=0,457$  and  $p=0,184$ , respectively).

TAVI with the new Evolut R indicates significant improvements compared to the former generation CoreValve, regarding less paravalvular leak and vascular complications.

**Keywords: TAVI, Evolut R, CoreValve**

## A 6-Year Single Center Registry of Transfemoral TAVI

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TAVI as an alternative to surgical procedure is constantly getting more appraisal, expanding its treatment indications on lower risk, younger patients' population. The above highlights the need for further evaluation of its safety and efficacy. Herein we present the 6-years results of single center registry of transfemoral TAVI.

We aimed to evaluate the short and long-term mortality, MACCE and other adverse events occurrence.

This is a single center retrospective registry of 248(100 male) patients who underwent TAVI between 2012-2017. Follow-up was gathered via telephone survey. We assessed the frequency of death, MI, stroke, major bleeding and other adverse events such as conduction disturbances requiring permanent pacemaker implantation.

Mean age was  $79,2 \pm 7,07$  years. Mean ES stand. and ES log. accounted  $9,5 \pm 2,2$  and  $18,2 \pm 11,7\%$  respectively. In perioperative period we reported 7(2,8%) episodes of cardiac tamponade, 1(0,4%) perforation of LV wall, 1(0,4%) aortic annulus rupture and 2(0,8%) occlusions of LCA requiring invasive management. During the follow-up period of mean  $503 \pm 407$  days we recorded 8(3,22%) strokes and 27(10,9%) deaths, of which 19(70,4%) were cardiovascular. 20(8,06%) patients required pacemaker implantation due to postoperative conduction disturbances.

In conclusion, the above presented data indicates that TAVI is a reasonable alternative to surgical intervention. Furthermore, factors such as staff experience gathered over time significantly diminish the procedure hazard.

**Keywords: TAVI**



## **Implantation of ICD as a part of primary prevention of sudden cardiac death - is it worth?**

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Implantable cardioverter-defibrillator (ICD) is used in secondary prevention of sudden cardiac death in patients who already survived an episode of sudden cardiac arrest (SCA) caused by ventricular arrhythmias. ICD is also implanted in primary prevention in patients who have not already experienced SCA but belong to high-risk group of such incidents. Implantation of ICD in secondary prevention is obvious and there are no doubts whether the procedure should be done. However, primary prevention is not always beneficial for a patient and sometimes exposes him to complications after the surgery and inappropriate shocks.

The aim of the research is to analyse of benefits and complications after ICD implantation in primary prevention.

85 patients of the Clinic of Cardiology in Szczecin who had undergone implantation of ICD in primary prevention were retrospectively analysed in the research. Considered implantations were performed from 1.01.2014 to 30.09.2016.

In the study group 27 patients underwent electrotherapy from ICD at least once. 20 patients experienced arrhythmias such as VT and VF, which were stopped by appropriate therapy from the device. Whereas, inappropriate shocks were generated by ICD in 7 patients. In 5 for 7 cases of inappropriate shocks were caused by dysfunction or dislocation of electrode. What is more, complications after ICD implantation occurred in 24 patients.

ICD stopped life-threatening arrhythmias in 23,5% of patients (for saving 1 life it is needed to implant 4 devices). Taking into account severe medical complications after ICD implantations, benefits for a patients are greater than a risk.

**Keywords: ICD, primary prevention, sudden cardiac death**

## **Transcatheter closure of atrial septal defect type II (ASD) in children with a body weight below 15 kg**

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Transcatheter closure of the ASD is considered the method of choice. Current guidelines recommend to perform the procedure in pre-school children. Existing scientific reports are rare and limited to small research samples.

The study aims at comparing effectiveness and safety of percutaneous closure of ASD in children weighing under and over 15 kg in direct and short-term period.

The analyzed group consists of 64 children (18 boys) who underwent a successful percutaneous closure of ASD in 2015-2017. Patients were divided into 2 groups: A – 30 patients with an average body mass  $12,8 \pm 3,39$  kg (range 5,6-15,0 kg) and B – 34 patients,  $35,7 \pm 15,8$  kg (15,8-65,5 kg). Indications for treatment were hemodynamically significant left-to-right shunt through septal defect with right ventricle dilatation. Procedure was performed mostly using the Amplatzer Septal Occluder. The others were Hyperion, Heart, Cera, Cribriformis.

The mean ASD diameter in transesophageal echocardiography examination in group A was  $11,2 \pm 3,51$  mm; in group B  $11,8 \pm 5,27$  mm. The average rate of the implant size to body mass was in group A  $1,07 \pm 0,25$  and B  $0,53 \pm 0,23$ . The mean fluoroscopy time was A  $4,23 \pm 2,41$  min and B  $6,14 \pm 10,1$  min. All treatments were effective except for one procedure in a child from group B whose implant had embolized. In the group of younger children, oblique placement of the occluder in the cavity was more often observed and required using of additional implantation techniques. The follow-up period was 3,3 years.

Transcatheter closure of ASD II in small children is safe and effective. Results in this group are comparable with those in older children group.

**Keywords: atrial septal defect, children, transcatheter closure**

## **Trends in quality of life after Bentall procedure conducted between 2012 and 2018**

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Post surgical quality of life is an important factor in every post-op patient management. It affects not only patients but also families and physicians.

Thus, the aim of this study is to assess the short term and long term quality of life of the patients who underwent Bentall procedure in years 2012-2018.

We included 35 patients eligible for this study who filled in The World Health Organization Quality of Life Questionnaire (WHOQOL-BREF). The WHOQOL-BREF questionnaire consists of 26 questions concerning physical health, psychological health, social relationships, and environment. In statistical analysis we compared the similarities and differences corresponding to the number of years post operation.

We found that in average patients after the Bentall procedure find that their quality of life is good and they enjoy life very much. Moreover, patients are satisfied with themselves and believe their life is meaningful. Pain prevents them from everyday activities to little extent and they are satisfied with their sleep.

Results suggest that they are neither satisfied nor dissatisfied with their capacity for work. On the other hand, they feel satisfied with their personal relationships and believe they get enough support from their friends. Moreover, they are content with access to health services. Finally, they seldom feel anxious or depressed.

**Keywords: Bentall procedure, WHOQOL-BREF, quality of life**

## **Trends in Bentall procedure patients 2005-2018: characteristics and treatment results**

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The Bentall procedure is a cardiac surgery operation consisting of graft replacement of the aortic valve, aortic root and ascending aorta, with reimplantation of the coronary arteries into the graft. It is considered to be the gold standard in the treatment of patients requiring aortic root replacement.

The aim of this study is to assess the characteristics of patients who were eligible for Bentall procedure such as sex, age, emergent or elective hospital admission, comorbidities, Stanford classification of aortic dissection, average length of stay and corresponding treatment results (conservative treatment, perioperative mortality and post-op follow up).

Data was gathered from medical records of 405 patients and analysed it statistically.

We found that there were 279 men and 126 women eligible for the Bentall procedure. Their mean age was 53 for women and 57 for men. 289 of the patients were admitted through emergency hospital admission and 120 through elective hospital admission. 99 died during perioperative period and 17 patients were administered conservative treatment.

According to Stanford classification 249 patients were identified as type A and 20 as type B. 266 patients turned out to have aortic dissection and 139 did not. Moreover, 102 patients suffered from chronic cardiac disease, 34 from diabetes, 237 from hypertension, 44 from hyperlipidemia. 55 patients were classified as obese and 71 were active smokers.

**Keywords: Bentall procedure, demography**

## **Quality of life in patients after Coronary Artery Bypass Grafting with Bilateral Internal Mammary Artery vs Single Internal Mammary Artery**

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CABG surgery remains a preferred mode of revascularization in patients with multi-vessel coronary artery disease. The left internal thoracic artery (LITA) and saphenous vein are the most commonly utilized conduits, but use of both internal thoracic arteries is performed less frequently due to more complicated procedure and greater amount of complications.

The purpose of a research was to analyse the quality of life (QoL) in patients who received BIMA vs SIMA in long term follow-up.

The study concerns 436 patients who underwent CABG from January 2005 to October 2010 in Cardiac Surgery Clinic in Katowice. CABG with BIMA and SIMA were used in 300 and 136 cases, respectively. QoL was assessed by telephone interview. The number of deaths was verified with the use of a national personal identification number database PESEL.

We compared BIMA patients and SIMA patients. Comparing with the preoperative period, a marked improvement in QoL after CABG BIMA was reported by 17,3% vs 7,4% in SIMA patients, and improvement by 41,3% vs 35,2%, respectively. No change in QoL was noted by 28,7% BIMA and 33,3% SIMA patients. 12,7% of BIMA patients reported deterioration or marked deterioration vs 24,1% in SIMA patients. During the follow-up, 17,7% of BIMA patients died vs 20,6% SIMA.

**Keywords: CABG, Quality of life, BIMA, SIMA**

## Mortality predictors in patients after upgrade from ICD to CRT-D

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Over a quarter of all cardiac resynchronization therapy (CRT) implants are upgrades from previous devices, mainly from implantable cardioverter-defibrillator (ICD). Unfortunately, upgrade carries higher risk of complications which reaches 18.7%. Limited number of studies evaluated outcome and predictors of death in patients undergoing upgrade from ICD to CRT-D.

To determine mortality predictors and outcome in patients undergoing upgrade from ICD to CRT.

Baseline data of all consecutive patients were retrieved from the hospital archive of a high volume, tertiary care university hospital. From among 765 patients implanted with CRT between May 2002 and March 2015 total number of 662 patients have been included into the study, of which 104 patients had upgrade from ICD to CRT-D (15,71%) whereas 558 had CRT-D de novo implantation.

During median follow-up of 1196 days (interquartile range: 550-2026) 245 patients died (37%), including 200 patients (35,8%) with CRT implanted de novo and 45 subjects (43.3%) with upgraded from ICD. In patients with CRT upgraded from ICD higher left ventricle systolic diameter (HR=1,06, 95%CI=1,02-1,1, P=0,002), creatinine at baseline (HR=1,01, 95%CI=1,00-1,02, P=0,01) and infective endocarditis during follow up (HR=2,38, 95%CI=1,02-5,6, P=0,046) were independently associated with higher mortality.

Mortality rate after upgrade from ICD to CRT reach 43% during 3,4 years of follow-up. Factors independently associated with mortality in patients with CRT upgraded from ICD are left ventricle systolic diameter, creatinine at baseline and device-related infective endocarditis.

**Keywords: CRT-D, ICD, mortality**

## **The impact of contrast-induced acute kidney injury on acute heart failure incidence after acute myocardial infarction treated invasively**

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Contrast-induced acute kidney injury (CI-AKI) is associated with worse outcomes after invasive treatment of acute myocardial infarction (AMI). Nevertheless, the impact of CI-AKI on acute heart failure (AHF) incidence is unknown.

The aim of study was to evaluate the impact of CI-AKI on the incidence of AHF among other major adverse cardiovascular events, in patients after percutaneous coronary intervention (PCI) for AMI.

Single-center, prospective study encompassed 665 patients with AMI, who were treated invasively. Patients were divided according to the presence or absence of CI-AKI, which was defined as a rise in serum creatinine of at least 26.5  $\mu\text{mol/L}$  (0.3 mg/dL) within 48 hours after contrast exposure, or at least 50% increase from the baseline value during index hospital stay, according to KDIGO 2012 criteria. Patients with CI-AKI (n=68; 10,2%) were compared to the control group without CI-AKI (n=597). The mean follow-up duration was 47.6 months.

The long-term observation revealed significantly higher mortality in the group with CI-AKI (33,9%) compared to the control group (17,8%, p=0,002). Patients with CI-AKI were more often hospitalized due to AHF (12,9% vs. 4,6%, p=0,006). There was no significant difference in the incidence of stroke, recurrent AMI, PCI and coronary artery bypass grafting procedures.

Contrast-induced acute kidney injury is associated with poor long-term outcomes after AMI. Its occurrence is associated with higher mortality and increased risk of hospitalization for AHF compared to patients without CI-AKI.

**Keywords:** Acute myocardial infarction, contrast induced acute kidney injury, percutaneous coronary intervention, acute heart failure, cardiovascular events.

## Comparison of two types of cardioplegia used in adults' cardiac surgery. Del Nido vs. Buckberg's solution

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Del Nido(DN) cardioplegia provides a heart in diastole lasting up to over 60 minutes. Single-dose DN cardioplegia may be a better solution for myocardial protection strategy than multi-dose cold blood Buckberg 4:1 cardioplegia(CB).

Compare myocardial protection using DN cardioplegia as alternative for classic CB cardioplegia in adults' cardiac surgery.

The study comprised 2108 patients, who underwent coronary artery bypass grafting(CABG=1331) or operation of heart valves(OHV=777) between 1 January'16 and 30 September'17. Patients from both groups were divided into two sections based on the type of cardioplegia administered during surgery. We compared postsurgery troponin levels, aortic cross clamp(AXC), cardiopulmonary bypass times(CPB) and mortality. For calculation we used Mann-Whitney test.

In CABG presurgery troponin level and EuroSCORE were higher in CB solution. Median age was equal in both groups. AXC and CPB times were significantly longer in DN section: 31(24-39) vs 27(21-36) min. for AXC, 56(44-68) vs 49(38-66) min. for CPB;  $p < 0,001$ . Postsurgery troponin level was slightly higher in DN section. In OHV between DN and CB group were no significant differences in presurgery troponin level and median age. EuroSCORE was higher for DN section. AXC and CPB times were significantly longer in DN: 62(50-77) vs 51(40-69) min. for AXC, 85(65-107) vs 70(55-92) min. for CPB;  $p < 0,001$ . Postsurgery troponin level was comparable in both sections: DN: 0,4(0,27-0,7) vs CB: 0,4(0,23-0,77).

Despite longer AXC and CPB times and higher EuroSCORE DN cardioplegia ensures similar myocardial protection to CB during OHV, for CABG using Buckberg's solution can give a better results based on postsurgery troponin levels.

**Keywords:** cardioplegia, del Nido solution, myocardial protection, adults' cardiac surgery



## **The use of levosimendan in children with low cardiac output syndrome after cardiac surgery**

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Levosimendan is an inotropic drug newly used in acute heart failure in children.

To evaluate improvement of the clinical condition in pediatric patients after cardiac surgery treated with levosimendan.

A retrospective assessment of treatment in 20 patients suffered from wide variety of congenital heart diseases, operated between 15th of March and 18th of December of 2017, was carried out. The median age of the patients was 55 days (0 days- 4 years). All the patients were treated with levosimendan at a dose of 0,2 mg/kg of body weight per minute. The most common cause of using levosimendan in therapy were post surgical symptoms of low cardiac output syndrome. In 8 cases the medicine had been used before the operation.

The significant side effects demanding discontinuation of therapy was not occurred. The permanent improvement of circulation after therapy enabled 70% of patients to be discharged from intensive care unit (ICU). The average length of presence in ICU was 28 days. The hospital mortality was 30% and in 62,5% of them the cause of death was circulatory insufficiency.

The therapy of Levosimendan provides optimized circulatory system functions and is the effective treatment for children with congenital heart surgeries.

**Keywords: : levosimendan, congenital heart surgery, low cardiac output**

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**INTERNATIONAL MEDICAL CONGRESS OF SILESIA**

# **SESSION OF NEONATOLOGY**

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## Risk factors of respiratory distress syndrome in preterms

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Respiratory distress syndrome (RDS) occurs almost exclusively in children born before 37 weeks' gestation with the incidence and severity related inversely to the gestational age. The underlying pathogenesis of RDS involves developmental immaturity of the lungs. However, the risk factors for respiratory disorder in early moderately and late-preterm neonates are different from those in full-term neonates, and remain unclear.

The investigation of the occurrence and risk factors of RDS in preterm neonates.

The study group consisted of 364 premature neonates hospitalised in the Clinic of Neonatology in Katowice in 2017. The medical documentation was analysed retrospectively. Out of 364 newborns enrolled in this study, 151 were early and moderately preterm (32(0/7)-33(6/7) weeks) and 213 were late-preterm (34(0/7)-36(6/7) weeks) neonates. The rates, potential risk factors, clinical characteristics of RDS in preterms were comparatively analyzed.

The incidence of RDS was more frequent in moderately preterm (45,7%) compared to late preterm (3,76%) children. Congenital pneumonia coexisted in 50% neonates with RDS in early and moderately preterm group, and in 39% in late preterms. Our study demonstrated that diabetes mellitus and hypertension during pregnancy as well as male gender were independent risk factors for RDS in preterm neonates.

Diabetes and hypertension during pregnancy as well as male gender may be considered as additional risk factors for RDS in early and moderately preterm neonates. In early and moderately preterm, male neonates respiratory distress syndrome very often coexists with pneumonia.

**Keywords:** respiratory stress syndrome, risk factors, early preterm, late preterm

## Factors influencing treatment of necrotizing enterocolitis-preliminary data

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Necrotizing enterocolitis (NEC) is a serious disease of newborns, frequently leading to death or severe clinical complications. Inflammation of intestines leads to injury, including discontinuity of intestinal barrier, macroscopically observed as a pneumatosis or air in portal vein. Intestinal perforation and peritonitis are the most serious complications. Unstable clinical condition of NEC sufferers makes the decision about optimal treatment a big clinical challenge. Treatment of NEC is conservative or surgical, the last including laparotomy or peritoneal drainage.

The aim of this project is to analyze treatment methods offered to NEC patients with respect to outcome.

Selected demographic and clinical data of 17 neonates suffering from NEC were analyzed. All of them were hospitalized in Intensive Care and Neonatal Pathology Unit in Katowice. In 7 cases laparotomy was performed and 1 newborn had only a peritoneal drainage. Among them, 5 newborns died. The clinical status of 6 out of 9 patients treated conservatively, has improved.

The analyzed subgroups were similar with respect to demographic factors. Perforation was an absolute indication for surgical treatment and the severity of the clinical condition was the main determinant of deciding whether to make laparotomy or drainage.

Early recognition of the disease and introduction of appropriate treatment is crucial for optimal medical management of newborns with NEC. However, there are obviously other factors influencing the illness course and outcome, and the search for them is highly justified.

**Keywords: NEC, newborns, treatment**

## **Knowledge, lack of knowledge or ignorance – pregnant women about postnatal treatment of newborn**

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Health Department have devised perinatal health standards which are proven to be effective. Their purpose is to provide good health to newborns.

The article's purpose is assessing pregnant women's knowledge about advised perinatal health of newborn and assessing proportion of opponents of those procedures.

146 pregnant women in age 17 to 43 from silesian voivodeship participated the survey. The article is based on the results taken from the poll composed of 26 questions. Statistical analysis was made in Statistica programme.

A majority (83,6%) of surveyed women are asserting to consent to do newborn's health screening. 125 (85,6%) of women will agree to have their children vaccinated. Taking vitamins has the biggest endorsement (86,3%) among postnatal procedures. The biggest proportion of opponents relate to vaccination (4,8%). In the surveyed group, 70 women already have offspring. Currently 26,5% of them is taking into consideration disagreeing to those procedures. Women, who are pregnant with their first child (66%) are not so willing to have perinatal procedures conducted comparing to women carrying their second child (72,6%). 3,42% women have given proper answers to questions about health screening for newborns.

The subject of newborn's perinatal procedures has become quite media, unfortunately it is not connected with increased knowledge of pregnant women. Although informative materials are widely accessible a lot nonsolid articles become a reason for increased number of parents disagreeing to have perinatal procedures conducted or are considering their sense.

**Keywords: perinatal health standards, vitamins, newborn's health screening**

## Ultrasonography of the neonatal adrenal gland

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Sonography of the adrenal glands (AG) in a standard protocol of neonatal ultrasound imaging. Normal adrenal gland and adrenal lesions can be delineated by ultrasonography (USG), although measurement of AG in neonatal period does not pose a routinely procedure.

The aim of the study was to evaluate the USG measurements of adrenal gland size in neonates with a correlation with perinatal characteristics.

The USG examination was conducted in 28 neonates (11 were late-preterm and 17 full-term) from the Clinic of Neonatology in Katowice in years 2017 and 2018, during the standard ultrasound examinations. The relationship was evaluated between adrenal gland size and gestational age, birth weight and gender as well as other USG measurements.

In full-term female newborns right adrenal gland size was 1,08cm and 1,06cm for the left AG. Full-term male newborns had right AG size 1,12cm and left AG – 1,15cm. Additionally, in late-preterm female group right AG was 0,99cm and left – 0,99cm. In male preterm newborns size of right AG was 1,02cm, and left – 1,04cm. Any significant differences were noticed in right and left adrenal gland sizes between male and female in full-term and late-preterm groups. Regarding to birth weight and other USG measurements, there were no meaningful disparities between groups as well.

The size of adrenal gland did not correlate with the birth weight, gender and kidney size in full-term and late-preterm newborns.

**Keywords: adrenal gland, neonatal ultrasonography, measurement, preterm delivery**

## Anti-vaccination movement. Is it a real threat for world's newborns?

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Compulsory vaccination contributed to eliminate some infectious diseases that were once a huge threat for newborns. However in recent years, the number of parents who disagree with compulsory vaccination of their children is growing.

The aim of the study is to calculate percentage of issues that caused mothers not to vaccinate their children and to determine factors that influence conscious decisions made by them.

Confidential questionnaire was used as the method of the research. It consists of 9 questions of metrical aspects and 8 closed-ended questions related to the research matters. Mothers participated in the research were from neonatology units in UCK hospital, Kolejowy hospital and Łubinowa 3 hospital. In the questionnaire took part 119 mothers.

94,55% of these mothers decided to vaccinate their children. Among mothers that decided not to vaccinate their children: 85,70% are afraid of complications followed by vaccinations, 85,70% are concerned that vaccinations can cause autism. 100% are convinced that vaccinations contain substances that are harmful to health. The most frequent source of information concerning vaccinations in group of mothers who vaccinated their children is a doctor (63,4%). Next ones are family members (53,6%) and Internet (52,7%). On the contrary, in group of mothers who did not agree to vaccinate their children, the most frequent source of information are Internet (85,70%) and a doctor (85,70%). The books and publications are on the third place (71,4%).

Our study presented that significant amount of mothers decide not to vaccinate their children. The main reason for such decision is the trepidation before sequelae of the vaccination.

**Keywords:** vaccination, anti-vaccination movement, newborns, health care



## Laboratory markers in early neonatal infections

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Congenital infection is a major cause of morbidity and mortality in neonates. Clinical signs of inflammation are non-specific making the diagnosis difficult, especially in the first days after birth.

The aim of this study was to investigate which of the known inflammatory markers has the highest predictability rate in early neonatal infection.

Population consisted of 225 out of 497 children hospitalized between January and June 2017 at the Department of Neonatology in Katowice. Study group consisted of 50 neonates with a diagnosis of congenital pneumonia or sepsis in the first days of life (DOL). One hundred seventy five one healthy neonates served as control group. Obstetric medical history, perinatal characteristic, procalcitonin (PCT), C-reactive protein (CRP) and total white cell counts as well as Immature to Total Neutrophil Ratio (I/T ratio) were evaluated.

C-reactive protein as well as PCT levels were significantly higher in neonates with congenital infection compared to the controls in the first DOL. However, PCT levels correlated with clinical signs of infection. The most frequently found in septic newborns in 1st and 2nd DOL was leukopenia, however no significant differences in I/T ratio were found between investigated newborns.

Both PCT and CRP concentrations were elevated in first days of life in neonates with congenital infection. However, PCT levels were found to be better marker of congenital pneumonia and sepsis in the early adaptation period. Additionally, I/T-ratio has limited value in early diagnosis of neonatal infections.

**Keywords:** newborn, C-reactive protein, procalcitonin, infection, neonatal sepsis, pneumonia

## Results of comparison of newborns who underwent therapeutic hypothermia according to CNS magnetic resonance imaging (MRI)

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Therapeutic hypothermia (TH) is applied to newborns who experienced mild or severe hypoxic-ischemic injury at birth. Its aim is to limit brain cell damage and to improve a long term neurological and developmental prognosis.

The aim of the study was to compare selected clinical and demographic data of newborns treated with TH, taking into account MRI results.

All patients (N=16) were hospitalized in GCZD in Katowice in the Intensive Care and Neonatal Pathology Unit between years 2015 and 2017. Abnormal MRI was found in 10 newborns (A), while in 6 cases (B) there were no pathological findings.

Having analyzed both groups, the following average differences were found: gestational age [wks] A:37±1,7 SD, B:39±1,6 SD, the first measured temperature [°C] A:35±2,9 SD, B:34,6±1,5 SD, the temperature at admission [°C] A:34,6±2,4 SD, B:33,9±1,6 SD, CRP [mg/dl] A:37, B:14, time gap (birth-TH) A:6h 24m, B:4h 03m. Additionally, pH and BE values and acidosis duration were analyzed, as well as postnatally introduced resuscitation procedures. Neurological status described by frequency of seizures and decreased muscle tension seem to correlate with MRI abnormalities.

Careful and timing medical management should be offered to the newborns after hypoxic-ischemic injury. Analyzed factors might be important to avoid further neurological damage due to the fact that essential differences between studied groups have been found. Although HT efficiency is confirmed, still very few patients are qualified for this procedure.

**Keywords: therapeutic hypothermia, newborns, hypoxic-ischemic injury, MRI**

## **Prenatal biometric profile and aortic blood flow in children with hypoplastic left heart syndrome and their postnatal outcome**

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Hypoplastic left heart syndrome (HLHS) is a rare, critical congenital heart disease, which is associated with risk of white matter injury during fetal period and it may cause development of further postnatal complications.

The aim of the study was to analyze the biometric profile of fetuses with HLHS and to evaluate size of aortic valve ring. Additionally, early postnatal development of those neonates was analyzed.

Observational study was conducted, using data of 54 neonates with HLHS born in Department of Neonatology in Katowice from 2002 to 2017. The collected data of fetuses and neonates (head circumference and fetal weight) was referred to fetal-infant growth chart. Aortic valve ring diameter was compared to appropriate size of aortic root of healthy fetuses for corresponding gestational age.

Appropriate diameter of aortic valve ring for corresponding gestational age were observed in 11,1% neonates without hypotrophy. However, decreased aortic valve ring diameter for corresponding gestational age were in 88,9% neonates with HLHS. In this group, head circumference percentile below the 10th was observed in 52,1% prenatally, confirmed postnatally in 45,8% cases. Cardiorespiratory failure was observed more often in neonates with aortic stenosis compared to children without aortic stenosis (63% vs 13%;  $p=0,04$ ).

Aortic stenosis in neonates with hypoplastic left heart syndrome is associated with lowered head circumference and early postnatal complications.

**Keywords: hypoplastic left heart syndrome, HLHS, biometric profile, aortic valve ring, hypotrophy**

**Vaccination refusal as a growing issue. Description of the phenomenon occurring among parents of infants born at the Prof. W. Starzewski Memorial Center for Women and Children's Health (CZKiD) in Zabrze during first three years of its functioning (01.11.2014r.-31.10.2017r.)**

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Vaccinations are safe way to protect against infectious diseases. They are particularly important in the infancy when the immune system is not yet fully developed. The growing strength of the controversial vaccination refusal trend in Poland, can not be omitted.

The aim of the study is to extract proportion of unvaccinated infants, born in CZKiD, in first 3 years of its functioning, define parents education level and reasons of their decision not to vaccinate.

Retrospective analysis of newborns whose parents did not agree on vaccinations recommended during first 24 hours of life, despite lacking medical contraindications to vaccinate. The work is prepared on the basis of medical documentation and analysis of hospitals quarterly lists of parents avoiding children's vaccinations.

Among 5246 (2015r-1384, 2016r-1772, 2017r-2090) babies born in the analyzed period, 130 (2.48%) have not been vaccinated (2015r-1,73%, 2016r-1,98%, 2017r-3,4%). 109 newborns come from on-time deliveries (38-41w). The vast majority of newborns were eutrophic (114). General condition of all newborns was assessed as good (Apgar). Approx. 98% of parents represent at least secondary education level. Moreover, most of them do not disclose clear-cut cause of refusal.

Our three years' experience shows that growing amount of parents do not accept birth vaccination doses. What is more, their decision is made even before birth, and from the beginning of hospitalization they are determined not to allow vaccinations. However, own experiences show that about 10% of guardians can be convinced to vaccinate or parents declare will to vaccinate later. Though, this kind of data is not reported in documents.

**Keywords: vaccination refusal; newborns; antivaccination movements; vaccines**

## Peri- and intraventricular hemorrhage in neonates of diabetic mothers

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Diabetes is a common complication during pregnancy that disrupts the function of the circulatory system.

The aim of our study was to assess the incidence and risk factors of intraventricular hemorrhage in newborns of mothers with gestational diabetes mellitus.

Retrospective research included 1481 neonates born in Neonatal Unit between January 2009 and December 2016. We analyzed occurrence of GDM in mothers, week of gestation, birth weight and head circumference in neonates and clinical complications such as perinatal asphyxia, jaundice and infections. The risk factors of PIVH in diabetic mothers' neonates were also analyzed.

In diabetic mothers' newborns with PIVH we observed significant differences in the frequency of perinatal asphyxia ( $p=0,0416$ ), infections ( $p=0,0157$ ) and hyperbilirubinaemia ( $p=0,0014$ ) as compared to the controls.

The study showed that PIVH is correlated with the occurrence of other complications in the early adaptation period in neonates of diabetic mothers.

**Keywords: PIVH, gestational diabetes, complications, early adaptation period**

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**INTERNATIONAL MEDICAL CONGRESS OF SILESIA**

# **SESSION OF NEUROLOGY AND NEUROSURGERY**

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## **Estimation of the subarachnoid hemorrhage risk depending on the aneurysm dimensions**

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Subarachnoid hemorrhage is an extremely complex and dangerous disorder which correlates with high mortality. The most common cause of non-traumatic subarachnoid hemorrhage is the rupture of intracranial aneurysm. That abnormality of cerebral arteries affects approximately 4% of population. In general, aneurysms are asymptomatic but even small ones can unpredictably grow, leading into the mass effect induction and they can eventually rupture. In following research, we would like to reveal the influence of different dimensions of aneurysm's sack on the risk of SAH.

We carried out this research to evaluate relation between aneurysm dimensions, bottleneck factor and the risk of SAH.

There were 424 patients with intracranial aneurysms recorded in our database. Most of them were qualified for treatment. All of the medical records were scrutinized and the available Digital Subtraction Angiography imagery of our patients were reviewed. Statistica program was used to perform a statistical analysis of aneurysms' geometrical and morphological features.

Analysis has shown significant impact of a bottleneck factor value and other aneurysms' characteristics on the risk of SAH.

**Keywords: SAH, aneurysms dimensions**



## Neurological disorders associated with sleep problems

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Sleep problems are widespread in children, but they are often underrecognized. Sleep loss and poor-quality sleep may have many adverse health consequences with a significant impact on the child's lives and family functioning.

The aim of this study was to examine the sleep habits and show statistically significant differences in the prevalence of sleep disorders in children and adolescents with neurological disorders.

A survey was conducted among 223 children, aged 3 to 18 years, admitted to the Department of Pediatric Neurology, the Medical University of Silesia in Katowice between August 2017 and March 2018. The control group consisted of 37 children correlative by age and gender to the patients from study group. To assess the prevalence of sleep disorders a multifactor questionnaire based on Sleep Disturbance Scale for Children (SDSC), patients' medical history and medical records were used.

The analysis of night sleep duration showed that the majority of the children slept 8-11 h (72,5%). Difficulty to wake up in the morning was reported in 16,5% and daytime somnolence in 4,04%. For the study group the SDSC total score ranges from 29 to 86 and for the control group the total score ranges from 28 to 39. Study demonstrated that children with epilepsy, headaches, pervasive developmental disorders and anxiety disorders had a higher prevalence of disorders in initiating and maintaining sleep and sleep-wake transition disorders.

Children with neurological disorders have a higher SDSC score and run increased risk of developing sleep disturbances.

**Keywords:** sleep disorders, sleep questionnaire, paediatric, children, adolescent

## **Supplementation of vitamin D3 among patients with multiple sclerosis: a preliminary study**

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Multiple sclerosis is one of the most common neurodegenerative diseases that affect people all over the world. The cause of MS is unknown, however there are new reports that link its onset and progression with hypovitaminosis D.

The aim of the study was to investigate the impact of vitamin D3 on the progression of MS as well as the knowledge about the necessity of supplementation among 50 patients.

50 patients with RRMS were assessed with a usage of 2 authors questionnaires. First questionnaire consisted of questions about demographic data and disease history, while the second asked about the supplementation of vitamin D3.

The results indicate that nearly 72% of patients with RRMS supply vitamin D3 in form of pills. However only 46% determined the level of vitamin D3 in the organism. Moreover about 91% of this patients think that the level of vitamin D3 should be investigated.

The study has shown that many patients with multiple sclerosis do supply vitamin D3, however the doses and the length of therapy vary greatly as in most cases the supplementation wasn't consulted with a doctor. Moreover the knowledge about the natural source of vitamin D3 and about its therapeutic effects seems to be quite poor, what indicates how important it is to raise awareness on this topic among the patients.

**Keywords: vitamin D, multiple sclerosis**

## A radiographic 3D Analysis of Posterior Ventriculostomies from Frazier Point

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Frazier Point is a common landmark for posterior ventriculostomy. Literature list several different entry and target points for this procedure. The accuracy of the catheter trajectory is paramount to the success of the procedure.

The comparison and quantification of known Frazier point definitions and target points.

54 patients with Computer Tomography Arteriography were included in the study. Scans were aligned to Frankfurt Plane and midline landmarks. Cases with visible mass shift effect, unsymmetrical ventricles and Evans Index greater than 0.3 were excluded from the study. On the remaining 30 cases, 8 entry and 5 target points were marked. Definitions for points were derived from neurosurgical literature. Each trajectory (line from each entry to each target point) was analyzed from the point of entry into the lateral ventricle to the coronal plane going through both interventricular foramina.

The total of 1200 trajectories were drawn, 41 (3.42%) graded as optimal, 1159 (96.6%) graded as non-optimal. The majority of optimal trajectories were targeted 4 cm above the contralateral endocanthion. For this target, the number of optimal was highest in entry 7 cm above inion, 3 cm laterally (14; 47%). Other trajectories with the same target were optimal in 11 or fewer cases per trajectory. (range 0-14; 0%-37%). Remaining target points had either 0 optimal grades or in one case 6 (20%) when entry 7 cm above inion, 3 cm laterally was paired with the target of 2 cm above nasion.

Out of analyzed trajectories, the most optimal is the use of point 7 cm above inion, 3 cm laterally as entry point and a point 4 cm above contralateral endocanthion as the target point.

**Keywords: neurosurgery; frazier point; ventriculostomy**

## Evaluation of the head circumference growth rate in the hydrocephalic children after implantation of the ventriculoperitoneal shunt

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Implantation of ventriculoperitoneal shunt can develop chronic intracranial hypotension. The syndrome is a single pathophysiological entity, characterized by an orthostatic headache. In addition to pain, patients may experience nausea, vomiting, neck pain, dizziness, horizontal diplopia, changes in hearing and a condition in which one or more of the fibrous sutures in an infant skull prematurely fuses by turning into bone what can eventually affect the head size.

The aim of our research was to evaluate the rate of head circumference rise in hydrocephalic children after implantation of ventriculoperitoneal shunt.

The questionnaire created by us was used in our research study and measurements of head circumference of children after shunt implantation were made.

In the research participated 46 patients. There were 25 girls (54,35%) and 21 boys (45,65%) who had been operated from 1991 to 2010 in the Department of Pediatric Neurosurgery in the Upper Silesian Child Health Centre of the Medical University of Silesia in Katowice. In the majority of cases the slowing down of head circumference growth occurred. We observed this tendency by comparison of the head circumference growth rate of each child in our study with percentile charts of Warsaw children of the corresponding age.

Having analysed the obtained data, we can conclude that after the implantation of the ventriculoperitoneal shunt in hydrocephalic children the skull develops abnormally. The rate growth of the head circumference decreases in comparison to healthy children.

**Keywords:** hydrocephalus, shunt, head circumference

## Results of ECG screening for QTc prolongation in patients with Parkinson's disease

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Prolongation of QTc is a risk factor for torsades de pointes. Patients (pts) who suffer from Parkinson's disease (PD) could have tendency to QTc prolongation. Drugs associated with QTc prolongation are used in this group of pts.

Screening for frequency of QT prolongation and analysis of associated factors in a group of pts with PD.

32 pts with idiopathic PD (♂ 20 ♀ 12, 63.9 years SD=8.2) who had a good quality ECG were included in the study. Information about: age, sex, disease's duration, outcome in Hoehn-Yahr scale (HY) and the third part of UPDRS, drugs, kalemia and comorbidities were obtained from medical documentation. QTc was counted manually using Bazzet's formula. Prolonged QTc was defined as  $\geq 450$  ms for men and  $\geq 460$  ms for women.

Prolonged QTc was observed in 7/32 (22%) pts. The group with prolonged QTc had higher average outcome in HY (3.2 vs 2.3) and part III of UPDRS ON/OFF (19/39 vs 13/33). The difference between the groups was statistically significant for HY ( $p=0.02$ ), but not for UPDRS (ON  $p=0.06$ , OFF  $p=0.40$ ). 15/32 patients took one or more drugs that could prolong QTc: 6/7 in the group with prolonged QTc and 9/25 in the group without prolonged QTc. The difference was statistically significant ( $p=0.03$ ). Age, sex, disease's duration and comorbidities were not associated with QTc prolongation. One patient in the group with prolonged QTc had hypokalemia.

QTc prolongation in PD pts is associated with commonly used drugs and probably disease severity. It frequently occurs among pts with PD, which suggests that a special vigilance in this issue is needed.

**Keywords:** Parkinson's disease, ECG, QTc, drugs

## **The patient with syncope referred to the neurological emergency room – do we recognize the neurological cause? - Pilot single-center study**

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Syncope is a transient loss of consciousness, caused by cerebral hypoperfusion, characterized by a fast onset, short duration, and spontaneous recovery. Cases of syncope are very common in general population. Despite the fact that reflex and cardiovascular syncope occur most often, patients are still referred firstly to neurological consultation.

The aim of the study was to assess the clinical and demographic parameters of patients referred to an neurological emergency room due to a syncope.

100 patients of the Clinical Hospital No. 1 in Zabrze SUM in which the diagnosis "R55 syncope, collapse" (ICD-10 classification) was made, were qualified for a retrospective study. Based on medical records we evaluated the age, sex, biochemical parameters of the blood, the presence of alcohol, arterial pressure, heart rate, comorbidities and the results of the CT.

Syncope was more common in women (55.7%). Among the comorbidities in over 30% of patients there was a cardiovascular disease, 11.4% diabetes, 8.9% nicotine use, 2.0% had neurological history. Analysis of blood biochemical parameters showed that 30.4% of patients had anemia, 12.7% elevated CRP, 12.7% elevated WBC, and reduced sodium level - 13.9% of patients. 7.6% of patients were under the influence of alcohol. In 15% of patients, the CT of the head was performed, in no case revealing significant pathology within the central nervous system.

Cases of syncope occur more frequently in women aged 50-80. The most frequent comorbidities are: anemia, hypertension and other cardiovascular disorders. Patients with neurological history are only a small percentage of patients with syncope.

**Keywords: syncope, neurology, neurological emergency room, cardiovascular diseases**

## Evaluation of the coexistence of cognitive disorders, leukoaraiosis and other risk factors in patients with stroke

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Stroke is one of the most common causes of mortality and disability in the elderly and promotes the development of cognitive functions. Among the many risk factors for stroke, leukoaraiosis is mentioned.

Evaluation of the dependence between the occurrence of LK, selected laboratory blood parameters, the results of carotid duplex ultrasonography and cognitive tests in patients with stroke.

The study included 102 patients (W: 56, M: 46) at the age of  $70.9 \pm 11.5$  hospitalized in the Stroke Ward of the Department of Neurology in Zabrze due to stroke. We performed clinical examination with assessment NIHSS score and MMSE test. Laboratory blood tests, carotid duplex USG and CT scan of the head were performed. Patients were divided due to the presence of leukoaraiosis (LK) in the CT scan.

LK was found in 24.5% (n=25) of examined patients. It was occurrence more frequently in patients over 72 years old ( $p < 0.001$ ). In the LK group, higher levels of LDL cholesterol ( $p = 0.002$ ), lower hemoglobin value ( $p = 0.03$ ) and significantly more platelets ( $p = 0.04$ ), were observed. In the USG study, higher KIM (intima-media) in the carotid arteries were found in the LK group ( $p = 0.02$ ). The incidence of LK was found to be three times lower in patients taking beta-blockers ( $p = 0.03$ ). Patients with LK achieved worse results in the clock test ( $p = 0.04$ ), median score 1 vs 5. There were no significant relationships between the occurrence of LK and the results of MMSE and NIHSS tests.

The occurrence of leukoaraiosis in patients with newly diagnosed stroke is associated with an increase in other vascular risk factors and cognitive impairment and is connected with the treatment which was used.

**Keywords:** Stroke, leukoaraiosis, Doppler ultrasound, beta blockers, clock test

## Multiple sclerosis lesions classification on MRI images using convolutional neural network (CNN)

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Multiple sclerosis (MS) is a chronic disease in which myelin sheath of neurons is damaged. The lesions of demyelination are localized predominantly in white matter of tissue with characterized dissemination in time and space. Nowadays MRI is widely used in diagnosis and monitoring of MS.

We decided to use convolutional neural network (CNN) in automatic classification of SM lesions in MRI images. Although the manual assessment of lesions is possible, this task is time-consuming and depends on interobserver sensitivity.

We separated about 900 of MRI images (T1-weighted, T2-weighted and FLAIR) of patients' brain with multiple sclerosis lesions and patients without any changes in this examination. The next step was conversion of these MRI images, which was necessary to train CNN in properly way. The CNN is a class of deep artificial neural network. It consists of an input and an output layer, as well as multiple hidden layers. Fully connected layers connect every neuron in one layer to every neuron in another layer. A very high number of neurons would be necessary, due to the very large input sizes associated with images, where each pixel is a relevant variable.

The CNN was initially trained on 670 images, then tested on 230 images with accuracy equal to 79%, which means that 182 images was classified correctly. The result will be further improved using a larger dataset.

This method will be helpful in categorization of morbidly changed brain areas in MRI images with a defined probability to multiple sclerosis lesions. The algorithm's task is to serve as an assistant for neurologists and radiologists.

**Keywords:** multiple sclerosis, neural network, MRI, automatic lesions classification



## **Serum inflammatory indicators as a predictors of neurological status in patients with stroke in the course of hypertension: a two-center study**

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Stroke is a leading cause of neurological deficits with hypertension as a main cardiovascular risk factor.

To assess the connection between the inflammation and clinical status of the patients with stroke in the course of hypertension.

713 individuals with stroke in the course of hypertension from the Departments of Neurology in Bytom and Zabrze were enrolled in the retrospective study. They were divided into N1 and R1 groups (with improvement in NIHSS and Rankin results, respectively) and N2, R2 groups (with deterioration or no changes in NIHSS and Rankin between the day of admission and discharge).

The majority of the patients were females [%] (51.54 vs 46.67). Women were significantly older than man [years] (78.00 vs 69.00,  $p=0.001$ , respectively) and had higher NIHSS results at admission [points] (6.0 vs 5.0,  $p=0.001$ , respectively). There were significant differences in the serum CRP [mg/l] (4.75 vs 9.40,  $p=0.001$ ) and WBC [ $10^3/\mu\text{L}$ ] (8.58 vs 9.02,  $p=0.006$ ) between N1 and N2, respectively as well as between R1 and R2: WBC (8.50 vs 9.00,  $p=0.006$ ) and CRP (4.20 vs 8.70,  $p=0.001$ ), respectively. A significant correlation between CRP and NIHSS on admission was observed ( $R=0.191$ ,  $p<0.05$ ). Both NIHSS and Rankin score on admission were correlated with age ( $R=0.212$ , and  $R=0.231$ ,  $p<0.05$ , respectively). CRP was related to the volume [ $\text{cm}^3$ ] of all lesions in CT ( $R=0.170$ ,  $p<0.05$ ).

In the course of stroke inflammation seems to be associated with worse neurological status of the patients with hypertension. Age and sex affect the clinical course of the stroke. CRP may indicate the size of radiological changes on CT.

**Keywords:** Stroke, hypertension, NIHSS, Rankin, inflammation<sup>OBJ</sup>

## **Changes in imaging studies in patients with alcoholic epilepsy in relation to patients with epilepsy of a different etiology**

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Epilepsy is one of the most common neurological diseases in the world. It is described as a set of both somatic, vegetative and psychological symptoms that can occur on the basis of various morphological and metabolic changes in the brain. Computed tomography (CT) precisely allows to show the nature, location and scale of pathological changes in the brain. The occurrence of seizure disorders on the background of alcohol dependence (AD) is a significant clinical problem -the risk of developing alcoholic epilepsy is three times higher than in the remaining population.

The aim of the study was to analyze pathological changes in imaging studies in patients with epilepsy associated with alcohol consumption in relation to people suffering from epilepsy on a different background.

Medical documentation of 105 patients hospitalized in urgent mode at the Department of Neurology in Zabrze due to seizure disorders was analyzed. The patients were divided into two groups: group 1 - patients with seizures related to alcohol consumption (n = 18, 17%) and group 2 (n = 87, 83%) - patients with different aetiology. The head CT was performed in each patient at the reception.

In patients with an AD, CT scans were abnormal in 83%, while in patients without any alcohol addiction only 39% showed pathology within the CNS. In both groups, the most frequently observed were cerebrovascular changes, calcifications within CNS structures, cortical atrophy and ventricular system dilatation. There are significantly more often hemorrhages to the CNS in patients with AD.

Head CT remains unquestionably one of the most important imaging examination performed to diagnose seizure disorders.

**Keywords: Computed Tomography, Imaging Studies, Alcohol Dependence, Alcoholic Epilepsy**

## **Pre-existing hypertension is independently associated with new language deficit after awake craniotomy for intrinsic brain tumor**

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Surgical treatment of brain tumors, especially those located in the eloquent areas causes high risk of language impairment. There are many preoperative risk factors which pose significant impact to postoperative eloquent functions.

The aim of this study was to correlate preoperative risk factors with appearance of language deficit in patients underwent awake craniotomy.

In this study we analyzed 23 patients undergoing awake craniotomy for intrinsic brain tumor. We analyzed pre- and intraoperative factors and their influence of occurrence of language deficit after surgery. New language deficit was defined as impairment of speech by terms of dysarthria, motor, sensory or mixed aphasia that occurred after surgery.

Ten (43%) patients developed new language deficit, of which 7 were transient and 3 were permanent. Patients with new language deficit had higher frequency of hypertension (60.00% vs. 15.38%;  $p=0.026$ ) and Mallampati score  $>2$  (100.00% vs. 45.45%;  $p=0.057$ ). Those patients also had higher values of preoperative Caprini score ( $3.70\pm 1.57$  vs.  $2.15\pm 2.08$ ;  $p=0.063$ ) and were older ( $56.70\pm 11.57$  years vs.  $43.31\pm 16.81$  years;  $p=0.043$ ). In multivariate logistic regression analysis pre-existing hypertension (OR: 8.25, 95%CI: 1.02-66.54;  $p=0.036$ ) remained independently associated with development of new language deficit after awake craniotomy for intrinsic brain tumor.

Pre-existing hypertension is independently associated with new language deficit after awake brain tumor surgery. Higher age, Mallampati score and Caprini score might be associated with development of new language deficit after awake brain tumor surgery.

**Keywords:** awake craniotomy, brain tumor, eloquent areas, language deficit, hypertension, Mallampati score, Caprini score

## **Risk factors for thrombus formation during coil embolization of intracranial aneurysms**

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The thrombus formation is one of the most feared adverse effect associated with coil embolization therapy. It is very important to identify clinical factors predisposing this complication, especially in terms of preventive perioperative application of antiplatelet and anticoagulant drugs.

The aim of the study was to identify independent predictors for thrombus formation during endovascular coiling of cerebral aneurysms.

A total group of 273 patients diagnosed with intracranial aneurysms and treated via endovascular coil embolization in University Clinical Centre in Katowice between February 2008 and March 2015 was included in the study. We reviewed patient medical records with emphasis on procedure description and potential risk factors related to thrombus formation during coiling. The thromboembolic events were identified in 19 (6.9%) patients. To determine potential variables associated with thromboembolism univariate regression analyses were performed with the use of thrombus formation events as the dependent variable in this model. The multivariate logistic regression model included covariates found to have a marginal association with thromboembolism in the univariate analysis (defined as  $p < 0.1$ ).

Multivariate analysis showed that subarachnoid hemorrhage ( $p=0.005$ ;  $OR=3.9$ ;  $95\%CI=1.51-10.16$ ) is an independent predictor for thromboembolic event during coil embolization therapy.

Subarachnoid hemorrhage is an independent risk factor for thrombus formation during coiling of intracranial aneurysms.

**Keywords:** intracranial aneurysms, endovascular procedures, intraoperative complications, thrombus

## Association between serum lipids concentration and clinical status in patients with stroke in the course of hypertension: a two-center study

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Hipercholesterolemia is not established as a certain risk factor for stroke in the same way that is for cardiovascular diseases.

To investigate whether serum lipids concentrations were related to the clinical outcomes of the patients with stroke in the course of hypertension (SH).

Based on patients' medical history from Departments of Neurology in Zabrze and Bytom, 713 SH were enrolled in the retrospective study. Laboratory results of the total cholesterol (CHOL) and triglycerides (TG) concentrations were compared in the subgroups of patients who have survived (GS, n= 626) and who were found death (GD, n=87) in the course of stroke. The correlations between ChOL and neurological status in National Institutes of Health Stroke Scale (NIHSS) on admission as well as between the volume of stroke lesions (VoSL) in computed tomography (CT) were evaluated.

GS and GD not differed in NIHSS results on admission (5.00[3.00-10.00] vs. 5.50[3.00-16.00],  $p=0.39$ , respectively). The proportion of individuals treated with statins [%] was 34.03 vs.17.24,  $p=0.002$ , in GS and GD respectively. The median serum CHOL[mmol/l] was 4.62[3.89-5.42] vs. 4.12[3.03-5.01],  $p=0.004$ , in GS and GD respectively, while there was no significant difference in TG [mmol/l] between these groups (1.30[0.98-1.71] vs. 1.24[0.97-1.65],  $p=0.61$ , in GS and GD respectively). A significant inverse correlation between CHOL and results in NIHSS on admission was observed ( $R=-0.108$ ,  $p<0.05$ ) as well as between CHOL and the VoSL in CT ( $R=-0.116$ ,  $p<0.05$ ).

Lower serum CHOL seems to be associated with poorer prognosis. However, use of statins requires further investigation.

**Keywords:** Cholesterol, stroke, NIHSS

## The prevalence of neurocognitive disorders among patients with chronic hepatitis C who underwent interferon-free therapy in Southern Poland

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Barbara Sobala-Szczygieł

The aim of this study was to assess the prevalence and dynamics of neurocognitive dysfunctions in chronic hepatitis C (CHC) patients undergoing anti-HCV therapy with direct acting antivirals (DAA) in single center in Silesia, Poland.

57 patients with chronic C (27 female, 30 male, median age 55, 24-81) were included in the study, 31 subjects in the follow-up (still pending). Neurocognitive disorders were assessed by MoCA (Montreal Cognitive Assessment), Trail Making Test (TMT) A and B as well as Stroop Test. Quality of life was measured by SF-20 questionnaire.

Neurocognitive disorders in absence of neurologic disorders were diagnosed in 11 (19%) of chronic hepatitis C patients by MoCA. 100% of the patients had disturbances in three MoCA aspects: attention, language, delayed recall. Minimal hepatic encephalopathy by Stroop test could be diagnosed in 15/26%. Additionally, patients with neurocognitive impairment had traffic accidents more often ( $\chi^2=5.1$ ,  $P=0.02$ ). In the follow-up group of subjects neither mean total number of points in MoCA test (23.6 vs 23.2,  $P=0.64$ ) nor duration of line connection test A (52 vs 46 seconds,  $P=0.54$ ) improved significantly, which suggests that longer observation after clearing of the virus could be necessary to reduce neurocognitive disorders.

Neurocognitive impairments are noted in more than 20% of patients with chronic hepatitis C. Importantly, such disorders are associated with prevalence of road accidents. Neurocognitive disorders (including minimal hepatic encephalopathy) in chronic hepatitis C patients seem to persist 6-months after cessation of therapy.

**Keywords:** Chronic hepatitis C, neurocognitive disorder, interferone-free therapy, minimal hepatic encephalopathy

## Not only tremor! Frequency of non-motor symptoms in Parkinson's disease

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Work's tutor: dr hab. n. med. Joanna Siuda

PD (Parkinson's disease) is one of the most common neurodegenerative disorders. Although motor symptoms are essential for clinical diagnosis, PD is associated with many non-motor signs.

The main goal of the study was to assess presence, frequency and different types of non-motor symptoms (NMS) in patients with Parkinson's disease.

The retrospective analysis concerned the data from medical records of 109 patients with PD (38 women, 71 men, average age 63,5 years). All patients were hospitalized in the Department of Neurology of the Medical University of Silesia in 2016. Non-motor symptoms were evaluated using medical chart history and non-motor symptoms questionnaire.

From among 109 patients with Parkinson's disease, 77 (70,6%) reported non-motor symptoms. The most common were sleep disorders (PD-S, 45; 58,4%), then autonomic dysfunction (44; 57,1%), mental distress (33; 42,9%) and cognitive impairment (21; 27,3%). Regarding the PD-S patients, they indicated insomnia (46,7%) and REM sleep behavior disorders (37,8%) as their leading symptoms, but only 12 patients (26,7%) were receiving treatment. Both groups (with and without NMS) were similar considering sex, PD onset and age during the evaluation. Vast majority of patients with non-motor symptoms (32, 41,6%) suffered > 10 years from PD and had more advanced disease (46; 59,7%  $\geq 3$  H-Y score). These patients also received substantially higher daily dose of L-DOPA (768,8mg).

Non-motor symptoms, especially sleep disorders and autonomic dysfunction occur commonly in patients with advanced Parkinson's disease. Those symptoms have a significant impact on patient's quality of life, but majority of them are not adequately treated.

**Keywords:** Parkinson's disease, non-motor symptoms, sleep disorders, autonomic dysfunction

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# **SESSION OF ORTHOPAEDICS**



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## **Rhizarthrosis: a new perspective for late stage disease's treatment.**

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Many systemic reviews suggest treating rhizarthrosis in many ways – from simple trapeziectomy to prosthetic arthroplasty. Although, it is proved, that no method has superiority to others.

To investigate if there's a difference in TMC arthritis treatment results between widely popular surgical technique single trapeziectomy with fixation with K-wires (ST) and a new one – open synovectomy with joint debridement (OSwJD).

In this retrospective study we evaluated 21 patients (mean age  $58,4 \pm 6,9$ ) with late stage TMC arthritis. All patients were treated by a senior surgeon M.M. with OSwJD. Patient perception was evaluated with a QuickDASH questionnaire, 10point pain visual analogue scale (VAS) and subjective treatment satisfaction scores. Evaluations were made after at least 1 year of treatment (mean  $4.5 \pm 2.8$ ). Results were compared with other studies with same follow-ups.

OS significantly reduced pain for all patients, same as ST. A complete relief of pain was seen for about half less patients than in ST studies. However, for patients with longer follow-up ( $6.6 \pm 2.2$  years) a complete relief of pain is seen for the same percent of patients. There was no significant difference in VAS and QuickDASH scores between the techniques. Moreover, 90% of patients reported their results as very good or excellent, same as after ST.

This study shows that treatment with OSwJD improves pain and functional scores, which improves significantly by time, and has very high subjective outcomes for patients. That is why it could become a new primary choice for treating stage late stage TMC arthritis.

**Keywords: rhizarthrosis, synovectomy, thumb**

## Low rates of diagnosis and treatment of postmenopausal osteoporosis in women from Upper Silesia

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Research has been conducted on the influence of risk factors on the development of osteoporosis based on FRAX (Fracture Risk Assessment Tool) calculator.

Assessment of the correct diagnosis of osteoporosis and the implementation of pharmacotherapy of postmenopausal osteoporosis in outpatient clinics in Upper Silesia.

The prospective cohort study included a group of 450 post-menopausal women, the average age of the study group  $65 \pm 11$  years. Was used detailed questionnaire and densitometry (DXA) lumbar spine and/or proximal femur (hip). The questionnaire was based on demographic and anthropometric data, including previous illnesses and low-energy fractures, family history, and treatment. The FRAX calculator was used to estimate the risk of another fracture.

BMD T-score ( $-2.48 \pm 0.76$ ); mean BMX FRAX 14.0% (range 2.3 - 53). The diagnostic criteria based on the T-score BMD data and the interview allowed the diagnosis of PMO in 103 women. 41% (N = 42) women declared previously diagnosed osteoporosis, with osteoporosis (N = 111, mean age  $71.5 \pm 9$  years) 63% had low-energy fractures. 70% used vitamin D supplementation, 23% of patients with diagnosed osteoporosis receive optimal treatment (Bisphosphonates + vitamin D + Ca prep), 22% did not receive any treatment. Patients used specialist medical advice on average in 4 specialists.

The results obtained indicate that osteoporosis is often remain not diagnosed. Treatment is inconsistent with current recommendations. It is necessary to popularize the FRAX calculator and conducting education in the recommendations for the diagnosis and treatment of postmenopausal osteoporosis.

**Keywords:** postmenopausal osteoporosis, FRAX, low energy fractures, risk factors

## Comparison of two important serum biomarkers of heterotopic ossification

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Heterotopic ossifications (HO) are frequent complications after many orthopedic surgeries. They often occur around hip and elbow joints, which lead to pain sensations and decreased range of movement. During last decades scientist described many risk factors such as: gender or surgical approach. We still can not predict in which case will HO occur.

The aim of our study is to evaluate if type I collagen crosslinked C-telopeptide (CTX-1) could have predictive value or play a role in early diagnosis of heterotopic ossifications as well as more widely used alkaline phosphatase (ALP)

Our study group consisted of 54 patients qualified for unilateral total hip joint arthroplasty. group A (N=18) – patients without risk factors, group B (N=18) – patients with risk factors additionally subjected to pharmacological prophylaxis and group C (N=18) patients with risk factors, but no pharmacological prophylaxis

In 19 (35%) HO(+) patients new ossifications were formed which were shown during the examination in the 48th week, compared to those before surgery. In the rest of the patients, worsening of ossifications in Brooker's scale HO(-) was not observed. Correlation between the corrected ALP concentration in the 12th week and the appearance of new ossifications  $r=0.59$  p

**Keywords: heterotopic ossification, CTX, alkaline phosphatase**

## **Dependence between the occurrence of lower back pain syndrome and lifestyle - study among students of the medical field**

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Lower back pain syndromes are a serious problem in adults. Systematic physical activity allows to prevent as well as inhibit the development process of many civilization diseases, including back pain.

Determination of the frequency of spine pain in the population of medical students and assessment of lifestyle-related factors affecting the appearance of pain.

The study included 74 randomly selected people from the field of medicine. The survey used a questionnaire consisting of 20 questions containing, among others: feeling or not, painfulness of the lower spine; frequency of perceived pain; ways to deal with the pain in the spine; the type of the situation in which the pain occurred, hours spent in a sitting and standing position; physical activity, sports, BMI.

The correct BMI was recorded by 72% of the surveyed students. 58% of the respondents do sports. 41% of the students felt pain in the lower spine. Further analyzes were conducted on a group of people who suffered from pain complaints: 18% said that the symptoms started during the studies. In 45% of the students, the pain lasted for more than a year, appeared once every 1-2 months. 67% of the respondents defined their physical activity as low, and the correct BMI was recorded by 39% of the students.

In the study group, 41% occurrence of lower back pain syndrome was found. The results may indicate a correlation between the lifestyle and the problems in the area of the musculoskeletal system.

**Keywords: lower back pain syndrome, sport, students**

## Short stem prostheses usage as valuable surgical treatment option for patients with IBD related arthropathy

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Haemophilic arthropathy is one of the most common complication after multiple bleedings to joints, a condition characteristic among patients with haemophilia. In case of irreversible changes to the hip joint, the treatment of choice is total hip arthroplasty (THA), however, for haemophiliacs the procedure is much more demanding. Application of short stem endoprosthesis is considered to be a safer approach, with lower risk of complication development.

The preliminary assesment of clinical outcomes of short stem THA in patients with haemophilia.

Between January 2010 and August 2016, 38 THA procedures were performed on patients with bleeding disorders. In 12 cases cementless short stem endoprosthesis were applied - 9 patients with haemophilia A and 3 patients with haemophilia B. The mean duration of observation was 34.3 months. The post-operative outcomes were evaluated using the HHS scale, WOMAC scale, and VAS scale. Radiological examination was performed and all postoperative complications were recorded and analysed.

The mean results obtained by patients according to the HHS were „very good” and „good” (82%) and satisfaction with the performed surgery was very high according to the VAS scale (93.4 points). All patients responded „yes” when asked if they would undergo the same operation again. The preliminary results of short stem THA are satisfactory.

Application of short stem endoprosthesis in THA may be appropriate solution for patients with inherited bleeding disorders. Long-term results are promising.

**Keywords:** hip arthroplasty, short stem prosthesis, haemophilia, haemophilic arthropathy

## Problems and expectations of an orthopedic patient

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Along the process of our society's ageing, more and more people will require orthopedic surgical treatment. Therefore, it is worth understanding what guides the patient while making a decision about undergoing a surgery and what he or she expects from it.

Evaluation of basic knowledge concerning surgical treatment, its effects and factors affecting patient's recovery back to an optimal condition.

An anonymous survey was prepared, subsequently filled in by patients of traumatic-orthopedic ward, from January to March 2018. Next, analysis and statistical data processing has been conducted.

The most significant age group that agreed to complete the questionnaire were patients between 61-70 years old (40% of all respondents). The survey included questions concerning painkillers intake – 80% of respondents admits using them at least from time to time, and as much as 50% everyday. In 5-point scale evaluating their quality of life, 75% of patients assessed it on the 3rd or lower level. In the similar scale, they were also asked about their expected quality of life after the surgery. As much as 30% doesn't expect any change, while 20% awaits improvement by at least 1 point. What's interesting, 55% claims not to know any possible negative effects of the surgical procedure and 15% thinks that any post-surgical rehabilitation is not necessary.

It is inevitable to precisely educate patients about chronic pain management, incontestable necessity of rehabilitation, as well as proper behavior and following the procedures both pre- and post-surgical in order to optimize its effects.

**Keywords: orthopedic surgery, quality of life, patient**

## State of bone tissue among youth and young adults-control study after 10 years

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Data pertaining the influence of Diabetes Mellitus Type 1 (DM1) on the state of children's and young adults' bones are ambiguous. In 2007 in the Silesian region the research of state of bones amongst children and youth with DM1 were performed. It demonstrated symptomatically worse state of bone tissue among youth with DM1 in relation to healthy peers.

The assessment of state of bone tissue among youth and young adults with DM1 and comparison them to the results of the research from before 10 years.

32 patients (12 women, 20 men) were examined in the age 14-27 ( $20,5 \pm 3,93$ ) years with DM1 lasting averagely  $13,9 \pm 1,97$  years. Skeletal system were appraised by Quantitive Ultrasound (QUS). Sex, age, DM1 duration, anthropometric parameters like standard deviation score (SDS), daily insulin requirement (DIR), average of glycated hemoglobin (HbA1c) in the year predated the research and also other medicaments intake, bone fractures and comorbidities were analyzed.

There were no meaningful differences between the current results of patients' QUS measurements and the results from before 10 years. However QUS measurements from before 10 years were relevantly correlated with current results obtained on left and right hands. The significance of differences between current and previous measurements on left hand between girls and boys and in persons without and with fractures were demonstrated.

In the examined group the state of bones has not changed in relation to the state from before 10 years and results exhibited correlation with the values of measurements obtained in the past. State of bone tissue was not correlated with long-range control of glycaemia.

**Keywords: children, diabetes mellitus, bone tissue**



## **Comparison of diagnostic methods - physical examination, ultrasonography, MR and arthroscopy in knee joint injuries**

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Medical ultrasound is a diagnostic imaging technique based on the application of ultrasound. It is used to see internal body structures such as tendons, muscles, joints, blood vessels, and internal organs. Its aim is often to find a source of a disease or to exclude any pathology. There are many methods for imaging the knee joint such as magnetic resonance imaging however, these are expensive and sometimes inaccessible methods in all hospitals. The rapid development of ultrasound technology can more accurately diagnose the soft elements of the joint.

The purpose of the study is to assess the usefulness of ultrasonography as a tool for observing changes in the knee joint compared to magnetic resonance and arthroscopy

The study was carried out in the group of 17 patients, ultrasound results were compared with magnetic resonance imaging and arthroscopy. We took the condition and health of patients from the questionnaires we have prepared. In usg we examined the elements of the knee joint such as, quadriceps tendon, patella, patellar tendon (ligament) medial collateral, ligamentum collaterale laterale, and the condition of joint surfaces

Ultrasonography is an effective and cheap method in diagnosing changes occurring in the knee joint, lets you rate assessment of exudate in the joint, assessment of synovial hyperplasia and its blood supply, recognition of tendon rupture and damage to the menisci.

Ultrasonography is an easily accessible, well tolerated by patients method of non-invasive assessment of changes in the knee joint.

**Keywords: injuries of the knee joint, disorders of knee joint, ultrasonography, MRI, arthroscopy, physical examination**

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# **SESSION OF OTHER SURGICAL SPECIALTIES**

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## **Epidemiology, diagnosis and endoscopic treatment for sinonasal and ventral skull base malignancy. Based on data from the Department of Otolaryngology at the Medical University of Warsaw, 2014-2017**

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Work's tutor: Dr n.med Anna Rzepakowska

Malignancies of the sinonasal region and ventral skull base tumors are rare types of tumors, which constitute 0,5-1% of all cancers and 3% of all head and neck cancers.

A retrospective analysis of data from 24 patients hospitalized between 2014-2017 in the Department of Otolaryngology at the Medical University of Warsaw. Based on medical records, a comparison of the age of patients, their sex, location of tumor, infiltration, and the coexistence of additional symptoms was undertaken.

This study focused on endoscopic access, postoperative complications, complementary treatment and the histological type of cancer. Among the patients treated endoscopically were 8 women and 4 men with an average age of 45 years and a median age of 37 years.

In 3 patients, the surgery was non-radical and in one case the procedure was not performed. In 13% of patients, the symptoms of the tumor were headaches, in 75% of patients the obstruction of the nasal passage. In 16% of patients, the tumor infiltrated the base of the skull, and 83% infiltrated the sinuses and nasal concha.

Sinonasal and ventral skull base malignancy tumors are a difficult diagnostic problem due to non-specific symptoms in the initial period of the disease. Endoscopic treatment is mainly performed in patients with less severe malignancy and infiltration of distant tissues.

**Keywords: Sinonasal and ventral skull base malignancy tumor, endoscopic, tumors, otolaryngology**

## Is indolent prostate cancer truly indolent? Biopsy findings verified by radical prostatectomy

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Overtreatment has often been criticized in the management of prostate cancer (PCa). At the same time stage pT3 is seen in almost half of prostates removed for PCa. Thus we hypothesized that our current way of qualification for biopsy and radical prostatectomy (RP) prevents from overtreatment and indolent PCa is a rare finding in a contemporary series of operated patients.

The aim of the study was to evaluate whether biopsy suspected indolent PCa (BSI PCa) is truly indolent in RP pathology and vice versa.

All patients who underwent RP in 2015-2016 in a single department were enrolled into this retrospective study. Their age, PSA were analyzed as well as pathology results from biopsy and from RP. BSI PCa was defined as Gleason score (Gl.s.) 3+3 in less than 3 cores with less than 50% of cancer involvement in core. We used two separate definitions of prostatectomy verified indolent PCa: Gl.s. 3+3 in maximum 5% of specimen, stage pT2a (Definition 1) or Gl.s. 3+3 regardless extensiveness, pT2 (Definition 2).

136 patients with the mean age of 65 were enrolled into the study (26 BSI PCa and 110 non-BSI PCa). Out of 26 patients with BSI PCa only 23,1% (def.1) and 38,5% (def.2) had prostatectomy verified indolent PCa. 61,5% of BSI PCa occurred to be Gl.s. >3+3 and 23,1% were pT3 tumors. Among non-BSI PCa prostatectomy verified indolent PCa was found in 2,7% (def.1) and 8,2% (def.2)

Indolent PCa is found uncommon in RP specimens, however biopsy is not reliable enough to predict such finding. More precise methods of preoperative patient diagnostics are urgently needed.

**Keywords: prostate cancer; biopsy; indolent prostate cancer; radical prostatectomy**

## **Adnexal pathology of Children Surgery Department patients - type of lesions and tumor markers levels in serum**

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Work's tutor: Dr n. med. Andrzej Grabowski

Tuberous enlargement of reproductive organs demands a proper diagnostics and intervention on surgical department. Adnexal torsion is one of the conditions called acute surgical abdomen due to the symptomatology and a risk of complications. A role of a reproductive system in female organism encourages to seek for efficient surgical solutions.

Our work's goal was to examine the indications for surgical intervention, applied method and clinical course within a group of 46 patients provided with medical care in Children Surgery Department.

Documentation of patients gained in a hospital computer system was analysed. Surgery indications, laboratory test results along with tumor markers were analysed. The data was presented using MS Office Excel

In an examined group a half of the cases was connected with left adnexal conditions, and half with the right. Average age of the patients was 12,91 years. Torsion with necrosis was observed in 2 patients, solid tumor – 3 with torsion, 2 without one; cysts – 6 with torsion, 32 without one. Moreover, 6 patients were diagnosed with inflammatory lesions on the appendix. An elevated level of markers was correlated with lesions of one patient.

Examining the correlation between Ca-125 values and an aspect of pathological lesions may indicate preference of Ca-125 elevations towards a certain one. In case of dermoid cysts an average value of Ca-125 was 21,41 IU/l. Coexistence of an inflammatory changed appendix with a corpus luteum haemorrhagicum cyst may be a reason for searching for a common mechanism leading to development of pathologies.

**Keywords: adnexa, Ca-125, tumor markers, ovarian cyst, ovarian tumor**

## **Invasive varicose vein treatment – easy and safe procedure or serious surgery?**

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Work's tutor: prof. Tomasz Urbanek

Chronic vein diseases affect a large part of population. Nowadays, we have minimally invasive methods to treat these diseases, which became an important point in many private medical facilities. However, even those methods carry a risk of complications.

To determine what methods of varicose vein treatment are offered by private medical facilities. To determine if those facilities inform about possible complications and results of treatment.

Review of articles in search of possible complications associated with chosen methods of varicose vein treatment, analysis of methods of varicose vein treatment offered in private medical facilities based on clinic's website, analysis of offers in search of information about possible complications and results of treatment based on clinic's website

61 private medical facilities' offers were analyzed. The most commonly offered methods of treatment were sclerotherapy (52 facilities, 82,25%), endovenous laser ablation (28 facilities, 45,90%), miniflebectomy (26 facilities, 42,65%). 13,61% of all offers included any information about possible complications associated with a method and 48,52% of all offers included information about results of treatment using given method

Private medical facilities which offer varicose vein treatment in most cases don't give information about possible complications associated with offered methods, however they give information about their effectiveness much more often.

**Keywords: varicose veins, complications, endovenous laser ablation, sclerotherapy, miniflebectomy**

## **The distribution of near point of accommodation and its association with age and type of sight work**

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Near point is the closest distance from which eye can see clear and lens reaches the highest optical power of accommodation. During this process, eye adjusts the refractive power of the lens to achieve clear image of the object on the retina.

The aim of this study was to find out if there is an association between near point of accommodation and age, sex, sight work and daily habits (sleep, nutrition, physical effort).

The group of 88 patients was examined. We measured near point of accommodation and took personal data of every patient. A text chart was put 60 cm from patient's eyes and gradually brought closer along eyesight line. Patient signaled when the text had become blurred – this distance was measured. Patients were divided into four groups regarding their age: 1st group  $\leq 39$  y.o., 2nd: 40-49 y.o., 3rd: 50-59 y.o., 4th:  $\geq 60$  y.o.

Medians of near point in each group were respectively: in gr.1 – 15cm, gr. 2 – 18cm, gr. 3– 55cm. In 3 cases in the third group and in all cases in the fourth group the near point was impossible to measure. Statistically significant dependence between age and the near point ( $R = 0.93$  - Spearman's correlation) was confirmed. In group of people  $\leq 39$  y.o. the near point was located significantly closer in subgroup of white-collar workers than in subgroup of blue-collar workers ( $p = 0.008$ ). In group above 40 y.o. average near point was higher among white-collar workers than blue-collar workers, but the difference was not statistically significant

Accommodation diminishes with age. Sight work significantly improves the process of accommodation only under 40 years of age

**Keywords: near point, accommodation, sight work, white-collar workers, blue-collar workers**



## Assessment of carotid artery revascularization in view of patients gender

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Stroke is one of the most common cause of mortality in the world. One of the main reason of stroke is atherosclerosis of carotid arteries. Carotid Artery Stenting seems to be currently popular, invasive method of treating this disease. Final success of revascularization depends on many factors, including patient's gender.

Aim of this study was to evaluate effectiveness of carotid arteries revascularization after CAS in view of patients gender.

Clinical material includes data of 224 patients who underwent the procedure of internal carotid artery revascularization in the year 2017. This study is a comparison of clinical outcomes in the groups of symptomatic and asymptomatic patients. Periprocedural and post procedural complications were compared, during 1, 3 and 6 months, divided into neurological adverse events, restenosis and others. Occurrence of adverse events was compared in males and females.

Men were consider to be a group of patients much more often treated with CAS than women, what may suggest they have greater predispositions to suffer from ICA stenosis. Male gender was also the one with bigger percentage of neurological adverse events and restenosis.

Results of this study showed significant differences between female and male patients, both in morbidity, adverse events and clinical outcomes

**Keywords: carotid artery stenting, revascularization, patients gender**

## **Thoracoscopy vs. thoracotomy - comparison of surgical methods of treatment of congenital oesophageal atresia**

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Oesophageal atresia (OA) with or without trachea-oesophageal fistula is an anomaly of the oesophagus and is characterised by a complete discontinuity of the oesophagus, with or without an abnormal fistula between the oesophagus and the trachea. Due to EUROCAT the prevalence of OA had increased from 2/10.000 births in 2003-2004 to 2.24/10.000 in 2011-2012.

Comparison of surgical methods of treatment of congenital oesophageal atresia.

Retrospective analysis assumed 20 medical histories of infants admitted to Department of Children's Developmental Defects Surgery and Traumatology in Zabrze in years:2011-2017 and treated due to OS. Collected data evaluated method of surgical treatment, postoperative complications, duration of hospitalization, comorbid diagnoses and demographical neonatal outcomes

5 infants underwent thoracoscopy (1 group) and 15 thoracotomy (2 group). In the 1 group, postoperative complications occurred in 40%, in the 2 group 60% and were more severe. Comparison of the time of hospitalization in both groups due to the Mann-Whitney U test revealed statistically significant difference ( $p < 0.05$ ).

Thoracoscopy enabled shortening of hospitalization, reduced risk of postoperative complications and allowed faster convalescence

**Keywords: oesophageal atresia ,thoracoscopy, thoracotomy, postoperative outcome, congenital malformation**

## In search of the best method of intraocular pressure measurement

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Intraocular pressure(IOP) is a known risk factor responsible for development of glaucoma. Since the introduction of the first tonometer there has been a significant progress in various fields of science and technology, thus new appliances designed to determine the IOP entered the market

The research aim was to compare the results of the IOP measured by three tonometers: the Goldmann tonometer(GAT), the non-contact tonometer Topcon CT-80(TCT) and the new generation of tonometer Ocular Response Analyzer(ORA) using corneal compensated IOP(IOPcc) and Goldmann correlated IOP(IOPg)

Measurement of the IOP was performed on a group of 45 patients(90 eyes) of Glaucoma Outpatient Clinic. The Friedman test and Spearman's rank correlation coefficient were used for further analysis of the results

In the Friedman Anova test, we compared the first IOP measurements examined by GAT, TCT and ORA. We discovered statistically significant differences( $p < 0,05$ ), thus Spearman correlation test was used: GAT with TCT( $r = 0,69, p < 0,05$ ), GAT with IOPcc( $r = 0,74, p < 0,05$ ), GAT with IOPg ( $r = 0,79, p < 0,05$ ), TCT with IOPcc ( $r = 0,56, p < 0,05$ ), TCT with IOPg ( $r = 0,68, p < 0,05$ ) We contrasted triple and averaged 3IOPcc and 3IOPg measurements with GAT using Friedman Anova test, no statistical significance was observed( $p > 0,05$ ). Spearman's correlation analysis was used: GAT with 3IOPg( $r = 0,82, p < 0,05$ ), GAT with 3IOPcc( $r = 0,8, p < 0,05$ )

The results proved it is essential to measure IOP by only one tonometer due to differences in results. Accuracy of intraocular pressure measurement with ORA is similar to GAT, provided that the averaging of three measurements is performed.

**Keywords:** Glaucoma, intraocular pressure, Ocular Response Analyzer, Goldmann applanation tonometer, Topcon CT-80

## **Endoscopically guided laparoscopic cystgastrostomy as treatment for pancreatic pseudocysts in children**

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Pancreatic pseudocysts or PPs are defined as a fluid collection in peripancreatic space, walled-off by inflammatory tissue. In children, PPs occur almost exclusively after blunt or penetrating pancreatic trauma. Traditionally, PP drainage in children was performed in a surgical procedure. However, in recent years it has been shown that in children, as well as in adults, endoscopic methods of internal pseudocyst drainage can be just efficient and safe.

This presentation aims to show a safe, efficient method of pancreatic pseudocyst drainage: laparoscopic cystgastrostomy with endoscopic visualisation.

From 2010 to 2016, five children showing signs of pancreatic pseudocyst were admitted into Regional Specialized Children's Hospital in Olsztyn. A group consisted of 3 males and 2 females. 4 of the children were operated on, 1 was treated conservatively. Recent abdominal trauma was confirmed in all cases. PP was confirmed using USG and CT. Large pseudocysts (10-13 cm) were found. Decision to perform drainage was made based on the imaging and pre-operative gastroscopy. In all cases, operators used a modified minimally-invasive approach. A trocar was inserted into the gastric lumen. While using an endoscope to follow the laparoscopic tool, a cystgastrostomy was created in the posterior gastric wall. Then, a pigtail stent was inserted to ensure proper fluid evacuation.

Rapid decrease in size of the cysts was observed. In all cases after 1-4 weeks cysts were no longer visible in CT.

This particular method doesn't require a very accomplished endoscopist, since it is mainly performed through a trocar. In these cases, endoscopic drainage using a cystgastrostomy proved to be a safe and effective treatment

**Keywords: endoscopic, cystgastrostomy, pancreatic pseudocyst, pancreatic trauma**

## Congenital urinoma - data presentation

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Urinoma is an encapsulated collection of the urine. It can occur spontaneously, or as a result of a blunt trauma. Usually it occurs in kidney region. Symptoms of the urinoma are developing gradually as it grows.

Data presentation of congenital urinomas (CU).

As a material cases of children diagnosed with CU in Regional Specialistic Childrens' Hospital in Olsztyn were taken. Material was analysed retrospectively, paying special attention to sex and age of the children, coexisting diseases, localization of the urinoma and treatment method.

There were 5 children diagnosed with urinoma, 4 males and 1 female. Patients were aged between 0 days - 11 months, with the mean age of 2.5 months. In 3 cases urinoma was diagnosed in prenatal examinations. Every patient was diagnosed with coexisting diseases. Each patient had hydronephrosis - bilateral in 3 cases. Congenital posterior urethral valves was present in 3 cases. Vesico-urethral reflux, umbilical hernia, phimosis and atresia of the ureter were also noted. 3 urinomas were associated with left kidney and 2 with right kidney. In 2 cases heminephrectomy with urinoma removal was performed due to abnormal structure of the kidney, in 2 cases-puncture under ultrasound assistance. In 1 case cyst was ruptured before the surgery and ruptured kidney was sutured and urine was evacuated from the abdominal cavity.

CU are more common in males. In analyzed group, every patient presented coexisting genitourinary tract disease. Urinoma can be caused by hydronephrosis. CU can successfully be diagnosed in prenatal examinations, what can lead to quicker surgical decompression of the cyst.

**Keywords: congenital, urinoma, pediatric surgery, hydronephrosis**

## Congenital Diaphragmatic Hernia - analysis of a rare congenital disease

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Congenital diaphragmatic hernia (CDH) is a condition where part of the diaphragm is not developed properly and abdominal organs are present in the chest cavity. There are two main types of this defect: Bochdalek hernia and Morgagni hernia.

Data presentation on CDH.

As a material cases of children diagnosed with CDH between 2012-2018 in Regional Specialistic Childrens' Hospital in Olsztyn were taken. Material was analyzed retrospectively, paying special attention to patients' sex and age, type and side of the hernia, internal organs that were present in the chest, complications and time of the hospitalization.

In analyzed period of time 5 patients were diagnosed with CDH: 3 females and 2 males aged 0 days - 1.5 year old. In 2 cases CDH was diagnosed with prenatal ultrasound examination, in 3 cases - postnatally. 3 Bochdalek hernia and 2 Morgagni hernia were noted: 4 left-sided and 2 right-sided (1 hernia was bilateral). 4 patients had small bowel present in the chest, 1-liver, 1-spleen and 1-colon. In all cases complications of the CDH occurred: 2 pneumonias, 1 paralytic ileus, 1 pulmonary sequestration and intestinal malrotation and in 1 case – death. Mean time of the hospitalization was 8,75 days. One death occurred 1,5 hours after admission to the hospital, without the surgery.

CDH was more common in females. CDH diagnosis was made more commonly in postnatal life. Bochdalek hernia was more common. Hernia was located in most cases on the left side. The most common finding in the chest was small bowel. CDH is a life threatening condition but if properly treated is curable. Prenatal diagnosis of CDH is not efficient and can lead to more complications

**Keywords: pediatric surgery, CDH, congenital, diaphragmatic, hernia**

## **Clinical and epidemiological assessment of patients treated for parotid gland tumors in 2016-2018 in the Department of Otorhinolaryngology and Laryngological Oncology in Zabrze**

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According to WHO data, salivary gland tumors account for about 6% of all cancers in the head and neck region. Benign tumors constitute about 80%, and the most common localization of tumors of the salivary glands is the parotid gland.

The aim In recent years, the number of patients with parotid gland tumors has been increasing, but there are no comprehensive epidemiological studies referring to the whole Poland. The aim of the study is to present data on patients with parotid gland tumors treated in our Clinic.

From January 2016 to February 2018 in the Department of Otorhinolaryngology and Laryngological Oncology in Zabrze 238 patients with parotid gland tumors were treated. The authors assessed histopathological characteristics and location of tumors as well as epidemiological data of treated patients.

Out of 238 examined patients, 158 underwent the surgical removal of the tumors. Of all patients, 50.63% were women (80), 49.37% were men (78). The average age was 58.15 (women 58.03, men 58.27). The tumors on the left side constituted 51.90% (82), right-sided 46.20% (73), bilateral 1.90% (3). In the analyzed group of tumors benign tumors constituted 75.32%, malignant tumors 11.39%, secondary tumors 2.53% and non-neoplastic lesions 10.76%. The most common benign tumor was tumor mixtus (52.10%, 62 cases) and Warthin tumor (43.70%, 52). Among malignant tumors most common were: mucoepidermoid carcinoma (5) acinic cell carcinoma (4) and non-Hodgkin lymphoma (2).

Parotid gland tumors are a current problem, which due to the increasing number of cases belongs to one of the most interesting issues in the area of head and neck surgery

**Keywords: salivary gland tumor; epidemiology**

## Parapharyngeal space tumors - results of surgical treatment

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Parapharyngeal space tumors (PPST) account for less than 1% of head and neck neoplasms. Both benign and malignant neoplasms may arise in there and typical is diversity of histological origin. Complete surgical excision is the basis of treatment.

Evaluation of the results of surgical treatment of PPST in the Department of Otolaryngology at the Medical University of Warsaw over the years 2015-2017.

A retrospective analysis of medical records including complaints, physical examination, results of imaging studies, surgical approach, postoperative complications and histopathological diagnosis in 22 patients.

The most frequent complaints were: discomfort in the throat, dysphagia, hearing disorders and a palpable tumor on the neck. Asymptomatic course of the disease occurred in 4 cases. CT and MR imaging were performed to determine the localization, dimensions and relation to adjacent anatomical structures. All patients were treated surgically. In most cases the tumor was removed radically. Significant intraoperative bleeding occurred in 2 cases and needed ligation of the external carotid artery. Based on histopathological examination there were only 4 malignant lesions. The most common origin were salivary glands. Postoperative complications occurred in 9 patients due to paresis of the lower group of cranial nerves.

Due to the anatomical topography and the content of essential vessels and cranial nerves, treatment of pathology of this area is still a challenge. The decrease of voice quality, impaired speech and swallowing should always be considered as complications after surgery

**Keywords: head and neck neoplasms, parapharyngeal space tumors, surgical treatment**



## Prostate cancer – do we know what we treat?

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In spite of developing new imaging technics, transrectal ultrasound prostate biopsy (TRUS-Bx) remains a golden standard in prostate cancer diagnosis. Assessment of prognostications and further treatment depends on results of histopathological examination of biopsy material.

The aim of our study was to evaluate sensitivity and specificity of TRUS-Bx on the grounds of comparing the results from histopathological examination of biopsy material and post-operative material after total prostatectomy. Also, the aim was to evaluate effectivity of imaging methods in comparison to histopathological examination in stating infiltration of the cancer on seminal vesicles (T3B+).

Medical history and results of histopathological examinations of biopsy material and post-operative specimens among 100 patients after total prostatectomy was analyzed. Patients were treated between 2016-2017 in the Clinic of Urology in Zabrze, Silesia.

Median age of the patients was 66. Median prebiopsy prostate specific antygen (PSA) value was 8,1. Median value of tumour malignancy, measured in Gleason scale was 6 in biopsy material and 7 in post-operative material. 47% of patients in post-operative histopathological examination revealed increased amount of points in Gleason system in comparison to pre-operative biopsy matherial examination. Evaluation of effectivity of imaging methods in comparison to histopathological examination in stating infiltration of the cancer on seminal vesicles (T3B+) showed that diagnostic specifity was 88,31%, sensitivity was 23,81%, positive predictive value (PPV) was 35,71% and negative predictive value (NPV) was 80,95%.

TRUS-Bx charaterises low accuracy in evaluation of actual malignancy histopathological grade of prostate cancer. Diagnostic value of imaginig examinations may be not adequate with actual cancer state. Only matherials obtained during radical prostectomy allow to asses grade of clinical and histopathological malignancy of prostate cancer. There exists a strong need for searching for new diagnostic methods in prostate cancer treatment.

**Keywords:** TRUS-Bx, prostate, biopsy

## Assesment of the value of Villalta and VCSS scales in determining severity of post-thrombotic syndrome

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Post-thrombotic syndrome (PTS) is the most common chronic complication of deep vein thrombosis (DVT). 20-50% patients develop PTS within 2 years after going through DVT. Despite well-known pathology there are still difficulties with defining post-thrombotic syndrome and determining its severity. According to available literature dedicated assessment scale of PTS remains the Villalta scale, which is based on analysis of occurrence of symptoms of venous system insufficiency.

The aim of the thesis is to verify an application of Villalta and VCSS scales in assessment of occurrence and severity of PTS and to verify sensitivity of mentioned tools in diagnostics of PTS.

At the first stage the evaluation (based on CEAP, VCSS and Villalta scales) of severity of chronic venous diseases in the group of students-volunteers was made. At next stage the group of patients after episode of DVT was a subject of assessment. Prepared questionnaires were filled in by 40 students (30 women and 10 men) in age range 21 – 24 years old.

Based on prepared questionnaires in the group of students without previous episode of DVT the score of Villalta scale corresponding to mild PTS was stated at 17,5% (7 out of 40 volunteers) and the score of Villalta scale corresponding to medium PTS was stated at 2,5% (one student), which indicates low specificity of Villalta scale. In next part of the research limited correlation between results in Villalta and VCSS scales was asserted, indicating VCSS scale as the tool which reflects degree of insufficiency of venous system in more reliable way.

Results of research in the group of patients after an episode of DVT are being analysed. Limited specificity of Villalta scale in diagnosis of PTS suggests caution in the common application of this tool as basic way of assessment of occurrence and severity of PTS

**Keywords: vascular surgery, post-thrombotic syndrome, PTS, Villalta scale, VCSS scale, deep vein thrombosis**

## **EBUS-TBNA and EUS-FNA as a diagnostic tool**

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In diagnostics of enlarged mediastinal lymph nodes and tumors as well as centrally located lung tumors, EBUS-TBNA (endobronchial ultrasound-guided transbronchial needle aspiration) and EUS-FNA (transesophageal endoscopic ultrasound-guided fine-needle aspiration) can be used. Both of them are minimally invasive procedures and different groups of mediastinal lymph nodes can be biopsied during each of these procedures.

Evaluation of effectiveness of EBUS-TBNA and EUS-TBNA in diagnostics of enlarged lymph nodes of mediastinum, tumors of lungs and mediastinum.

Retrospective analysis of medical documentation of 295 patients who underwent EBUS-TBNA and/or EUS-FNA in The Department and Clinic of Thoracic Surgery in Zabrze in years 2016-2017.

190 men represented 64,4% of population. The average age was 61,84. 512 EBUS-TBNA were performed. The most frequently aspirated lymph nodes were 4R(37,5%) and 7(33,01%). The tissue from the tumor was aspirated 34 times (6,64%). The tissue from lymph nodes was sampled in 95%. 309 EUS-FNA were performed. The most frequently lymph nodes group number 7 (64,72%). The biopsy of the tumor was performed in 21 cases(6,79%). The tissue from the lymph nodes was sampled in 92,86%. 206 of patients underwent EBUS-TBNA and EUS-FNA. The complications were not revealed. 31 patients with negative histopatology result were operated. 6 results were false negative. Negative predictive value was 81%.

EBUS-TBNA and EUS-FNA are effective diagnostics methods with low risk of complications. They can be used in diagnostics of tumors, due to lower risk of pneumothorax in comparison with transthoracic needle biopsy.

**Keywords: EBUS-TBNA, EUS-FNA, Negative predictive value (NPV), transthoracic needle biopsy**

## How do blind people dream? The thematic content of dreams in blind individuals

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During dreaming the brain constructs a complex and organized model of the world. However, compared to waking life, certain components predominate whereas others are underrepresented. Moreover, dream structure is meaningfully and repeatedly modulated by various experiences.

Analysis of thematic structure of dreams among congenitally and late blind individuals.

The study group consisted of 42 blind people (20 men; mean age  $45,71 \pm 13,94$  years) and 40 sighted volunteers who constituted sex- and age-matched control group (SC). Among the blind, 19 people lost their sight before the age of one (CB), while 23 of them in the later period (LB). Every morning for 4 weeks the participants answered the questions related to the thematic structure of their dreams (social interactions, striving, fortune, descriptive elements).

The amount of social interactions was significantly lower among CB participants than in SC group ( $71\% \pm 19$  vs  $84\% \pm 14$ , respectively;  $p=0.028$ ). However, the mean number of nonhuman creatures figured in dreams of blind was higher ( $p=0.026$ ). The CB group reported a higher frequency of aggression than the SC group ( $52\% \pm 30$  vs  $31\% \pm 25$ ;  $p=0.037$ ) and CB mostly occurred in the role of victims. No difference was found between the prevalence of successes, but CB had higher number of dreams containing failures and misfortunes than SC individuals.

The CB group reported more dreams containing aggression, mainly directed at themselves. Furthermore, they dreamed more about failures and misfortunes than successes. This results are in line with the observation that blind people have higher level of anxiety than SC.

**Keywords: blindness, dream content, dream function**

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**INTERNATIONAL MEDICAL CONGRESS OF SILESIA**

# **SESSION OF PAEDIATRICS**

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## **Use of Oral Bisphosphonates treatment in children with Osteogenesis Imperfecta: evaluation of treatment effectiveness**

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Osteogenesis imperfecta(OI) is a group of genetic disorders that mainly affect the bones. As the result bones break easily. The main reason is genetically determined lack of type I collagen, a basic structural protein in the connective tissue. Nowadays, Bisphosphonates are used as the treatment in this group of disorders to increase bone mineral density and reduce fractures.

The aim of our study is the evaluation of treatment effectiveness and the characteristic of patients with Osteogenesis Imperfecta treated in Department of Paediatrics and Paediatric Endocrinology of John Paul II Upper Silesian Child Health Centre in Katowice.

Our study was conducted using data collected from the patients' hospital records and medical history obtained from children' parents. Ten children were observed (n=10; 8 boys) with mild forms of OI. The average age of first bone fracture was 3,64+/- 2,17 years. The half of patients (n=5; 4 boys) were treated with oral bisphosphonates(Ostenil 70).

The children treated with oral bisphosphonates had younger age of first fracture (3,05 vs. 4,38 years) and the bigger cumulative number of fractures (7,6 vs 3,8). Among children treated with bisphosphonates an significant reduction of bone fractions was observed after treatment enablement (respectively 6,2 vs. 1,4;p<0,01). There were no complications indicated. Convincing analgesic effects of oral bisphosphonates were noted.

Use of Oral Bisphosphonates in OI threatment significantly decreases amount of bone fractions and shows analgesic effects. There was no complications observed. It allows to suggest that bisphosphonatesimprove clinical function of patients with OI.

**Keywords: Osteogenesis Imperfecta, OI, Bisphosphonates, treatment**

## **Electrocardiographic T wave parameters in children with symptomatic and asymptomatic long QT syndrome**

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Congenital long QT syndrome (LQTS) is a disease characterized by syncope and sudden cardiac death manifested with QT interval prolongation and predisposition for malignant ventricular tachyarrhythmias. In clinical practice, the T peak to T end (TpTe) interval reflects total dispersion of repolarization that may provide an accurate electrophysiological marker of ventricular arrhythmogenesis and risk of SCD, it is considered a more sensitive compared to the standard QT intervals.

The main purpose of the study was to evaluate RR, QT, and TpTe intervals in the children with LQTS as well as to determine whether the values of these repolarization parameters may be used in clinical practice.

Retrospective analysis was made among 36 children with symptomatic LQTS (mean age  $11,3 \pm 4,9$ ) and 25 children with asymptomatic LQTS syndrome (mean age  $8,12 \pm 5,56$ ) treated in the Paediatric Cardiology Department in Katowice-Ligota. The RR, QT, and TpTe intervals were measured manually in the lead V5, and corrected using Bazett's formula.

There were no significant differences in the RR and QT intervals and QTcB between the children with symptomatic LQTS and the children with asymptomatic LQTS. The children with symptomatic LQTS had longer TpTe intervals but with no statistical significance ( $p=0.6586$ ) comparing to the children with asymptomatic LQTS.

The children with asymptomatic LQTS show prolongation QTc and TpTe intervals, similarly to the children with symptomatic LQTS, and they are required to conduct a precise anamnesis, education, modifying a lifestyle and effectively treat in order to prevent sudden cardiac death, related to malignant ventricular arrhythmias

**Keywords: LQTS syndrome, electrocardiographic T wave parameters, repolarization**



## Sport in children with diabetes type 1 – looking for golden mean

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Impact of PA-physical activity on metabolic control in diabetes (DT1) and way of preparation.

The study included 105 children (girls 42,8%) in age 8-20 years (average 14,5), suffering from (DT1) for at least 1 year (average 5,8 years) with the mean of HbA1c 7,4%. PA was qualified according to: frequency F1-F4, intensity (METs Scale) and total time of PA (T1-T4). Data about height, weight, blood pressure, lipid panel and HbA1c come from Diabetology Clinic files. Survey estimated children knowledge about preparation to the PA and its impact were conducted with each patient.

Percentage distribution for each of estimated parameters look as follows: F1 -14%, F2-24%, F3 45%, F4-17%. Intensity: MET<5,5 35%, MET>5,5 65%, T1 21%, T2 47%, T3 32%. We didn't indicate statistically important connections between kind of PA and metabolic parameters. The greatest number of children with good metabolic control (HbA1c <7,5%), was noticed in group F3 ( $p<0,05$ ). Higher intensity of sport positively correlates with HbA1c ( $p<0,05$ ). The best metabolic control was achieved with total time 2-5h/week ( $p<0,05$ ). Total time of exercising positively correlates with children age ( $p<0,05$ ) but not with duration of DT1. Younger children more often plan PA ( $p<0,05$ ), however it's more frequently connected with hyperglycemia after an effort ( $p<0,05$ ). We didn't observe relation between type of PA and occurrence of hypo- and hyperglycemia. In assessment of survey, every aspects about PA, positively correlate with good mood in children ( $p<0,05$ ).

**Keywords: diabetes type 1, physical activity, HbA1c**

## **Does the weight of the backpack affect the problems in the movement system in children?**

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Nowadays, we observed a continuous increase in the occurrence of postural defects and disorders in the skeletal system in children. This is a very complex problem that consists of many factors. Poor diet, lack of physical activity, sedentary lifestyle, lack of work ergonomics have a bad impact on health. We can't ignore the negative impact of overloading on the human spine, which may have long-term effects not only in adolescence, but also in adulthood.

The aim of the study was to find the weight of children's backpacks from primary schools, health implications resulting from overloads of the osteoarticular system and the search for the cause of this appearance.

The study was based on measurements of body weight, height and severity of school backpacks among 171 children attending to elementary schools. Except to, an original questionnaire was created. It contains 16 questions dedicated to parents.

The correct weight of backpacks was noted in 57 children (33%). Over 1/5 of students have extremely overloaded schoolbags, which exceed 15% of their body weight. The greatest intensity of this appearance involve children from grades I-III. Problems from the osteoarticular system occur in 41 students (23.98%) , and 60.98% of this students have too heavy backpacks.

Overloaded backpacks are an important, unresolved problem that has health implications. Parents' knowledge about the permissible loading of their children is insufficient. It should be organized meetings with parents on whom this problem will be presented and reliable information will be provided. It is still necessary to monitor the weight of backpacks and the degree of this appearance.

**Keywords: movement system, children, backpacks.**

## **Assessment of inflammatory bowel disease in terms of the incidence, clinical course, diagnostic methods and therapeutic procedures in 2007 and 2017 among paediatrics patients**

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Crohn's disease (CD) and ulcerative colitis (UC) are the principal types of inflammatory bowel disease (IBD). Their main manifestations are diarrhoea, lower gastrointestinal tract bleeding, abdominal pain and weight loss. Methods used in diagnostics are endoscopy, histopathology and imaging. Before the age of 20 about 25% of all CD's cases and 10-40% UC's occurs.

The aim of the study was retrospective evaluation of the incidence of new CD's and UC's diagnoses and also an analysis of clinical data of patients hospitalised in the Paediatric Gastroenterology and Hepatology Unit of Clinical Hospital No1 in Zabrze in 2007 and 2017.

Significant increase of new CD's diagnoses relative to the number of all hospitalizations (0,31% vs 0,945%,  $p=0,03$ ) was noticed, which was not observed for UC (1,66% vs 1,41%, NS). No differences concerning the age of diagnosis, time until the diagnose was made, type of disease or anthropometric parameters were found. Observations regarding the imaging methods showed that lesions in ultrasonography were reported significantly more often in 2017 than in 2007 ( $p=0,0001$ ). Routine therapy did not differ in selected years. However in 2017 in 4 patients biological drugs were included, and in 3 cases nutritional treatment was ordered.

The incidence rate of Crohn's disease is increasing, while the number of cases of ulcerative colitis remains at a constant level, which is consistent with the global trend. Significance of ultrasonography in the IBD's diagnostic increased; furthermore, biological preparations and nutritional therapy were introduced into the treatment.

**Keywords: Crohn's disease, ulcerative colitis, inflammatory bowel disease**

## Vitamin D levels in children with CKD on conservative treatment

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Chronic Kidney Disease (CKD) is characterized by alteration of mineral metabolism of calcium and phosphorus related to phosphate retention, secondary hyperparathyroidism and vitamin D hydroxylation disorders in kidneys. Additionally, bone disorders can be augmented by vitamin D deficiency in the diet.

Study aimed in investigation of vit.D serum level in children with CKD treated in Dpt of Nephrology in Zabrze, SMDZ, Medical University of Silesia in Katowice in 2017.

The study group included 28 children with CKD in stage 2-5 (10 girls and 18 boys; mean age  $9.5 \pm 5.4$  years), all of them were treated conservatively. The etiology of CKD in most children was CAKUT. Mean estimated GFR was  $37.7 \pm 21.9 \text{ ml/min/1.73m}^2$ . Sixty percent of patients was supplemented with vit. D formulas. The evaluation of serum vitamin D was conducted during the routine visit in Department of Nephrology. Serum level of 25(OH)D was measured using electrochemiluminescence method by Cobas, Roche analyser.

In examined group, mean height was  $126.3 \pm 28.9 \text{ cm}$ , and in 39% of children was under 3rd pc for height. The mean hemoglobin level was  $12.4 \pm 1.9 \text{ g/dL}$ ; mean creatinine level  $186.6 \pm 133 \mu\text{mol/l}$ , phosphate level  $1.5 \pm 0.2 \text{ mmol/l}$ ; total calcium level  $2.5 \pm 0.18 \text{ mmol/l}$ , mean PTH level  $84.5 \pm 62.3 \text{ pg/ml}$ . Mean vitamin D serum level was  $38.3 \pm 14.9 \text{ ng/ml}$ .

According to current standards of vitamin D level in children in Poland, 60% of patients had normal vitamin D serum level, which resulted from the continuous supplementation. However, despite the supplementation of vitamin D and conservative therapy of CKD, the growth of 39% of children was still under 3rd percentile.

**Keywords: Vitamin D, CKD**

## **Osteoprotegerine (OPG) as an early marker of chronic diabetes complications in pediatric patients with type 1 diabetes**

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Type 1 diabetes (T1D) is a chronic disease associated with the risk of macroangiopathy. Diabetes duration is the most influential factor. Recent studies showed higher concentration of OPG in T1D patients, especially those with diabetes complications, compared to healthy population.

The aim of our study was to evaluate the utility of OPG as an early marker of late complications in children with T1D.

Our study included 78 T1D children (39 boys) with mean age  $13,09 \pm 3,69$  years and at least 1 year of diabetes duration. Patients were divided into 3 groups: 10 years of T1D duration. The concentration of OPG has been marked by ELISA test. Additional data: mean glycaemia, TDD (units/kg/day), basal/TDD (basal%), HbA1c, BMI, BMI z-score, BP, albumin to creatinine ratio (ACR), cholesterol, HDL, LDL and triglycerides were compared between groups.

Mean OPG concentration in 3 groups of patients was  $3,085 \pm 1,607$ ,  $1,860 \pm 2,019$  and  $2,738 \pm 1,864$  pmol/L, respectively. We observe negative correlation between OPG and HbA1c ( $r = -0,26$ ), weight ( $r = -0,386$ ) and height ( $r = -0,345$ ) in the whole study group and positive correlation between OPG and cholesterol in children with T1D duration

**Keywords: type 1 diabetes, osteoprotegerine, chronic diabetes complications**

## **Invasive fungal infections in pediatric patients with acute leukemia.**

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Progress in oncological therapy has increased the number of cured children. On the other hand, the introduction of more intensive treatment has been accompanied by the higher rate of invasive fungal infection (IFI). However, diagnosis of IFI is difficult and there are only limited number of studies characterizing IFI in children.

Investigation of risk factors and prognosis of IFIs in children with acute leukemia.

8 medical records of patients treated in Department of Pediatric Hematology and Oncology SUM due to acute leukemia throughout 2015-2018 were subjected to the retrospective analysis – 6 males, 2 females.

Final analysis included 14 incidents of IFI in patients treated for: acute lymphoblastic leukemia(35,7%) acute myeloblastic leukemia(64,3%). The average age of onset 8 years. Only 1 patient developed proven IFI, detected by pulmonary biopsy. Other cases comprised possible IFI. 21,4% cases had history of HSCT. The neutrophil count was  $\leq 100/\text{mm}^3$  in 12 (85,7%) episodes. According to the phase of chemotherapy treatment: 85,7% IFI occurred in frontline chemotherapy and 14,3% after relaps.100% had posaconazole prophylaxis during chemotherapy. Average duration of IFI treatment by amphotericin B was 16 days. 1 case of death.

There are prognostic factors of IFI in children who undergo oncological treatment. IFI is serious life-threatening complication in pediatric patients with acute leukemia.

**Keywords: invasive fungal infection, leukemia, children**

## Fructose intolerance diagnosed by means of the hydrogen breath test in the pediatric population

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Hydrogen breath tests (HBT) are being used to diagnose sugar intolerance. Undigested carbohydrates undergo bacterial fermentation in colon so hydrogen and methane gas can be detected in the exhaled air.

To analyze the frequency of positive HBT results after fructose administration among children suffering from gastrointestinal symptoms and assess the frequency of specific symptoms among children with detected fructose intolerance.

HBT after fructose administration was performed in 323 patients (179♀, 18±2 years old) with various gastrointestinal symptoms.. Age, sex, HBT result, standard deviation score (SDS) for weight, height and body mass index (BMI) as well as frequency of chosen symptoms were analyzed.

114 children (35.29%) had a positive HBT result. Children with a positive HBT result were younger than those with negative results (9 vs 11.57 years;  $p<0,001$ ). Among children with fructose intolerance boys were younger than girls (7.96 vs 9.9 years;  $p<0,001$ ). The most common symptom of fructose intolerance was stomachache (89.47%) followed by diarrhea (40,35%) although there was no significant difference in their prevalence depending on the HBT result.

The results demonstrate that fructose intolerance symptoms are not specific and may be caused also by other gastrointestinal diseases and disorders. Therefore the diagnostic process of patients with such complaints cannot be focused only on fructose intolerance. Gastrointestinal symptoms are more likely to be caused by fructose intolerance in younger children.

**Keywords: hydrogen breath test, fructose intolerance, gastrointestinal symptoms**

## The first onset of idiopathic nephrotic syndrome in children

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Nephrotic syndrome is characterized by hypoalbuminemia  $50\text{mg/kg}$  body weight/day, followed by edema and hyperlipidemia. In children the most common diagnosis is idiopathic nephrotic syndrome (INS).

The aim of the study was to analyze the clinical picture and laboratory findings in children during the first episode of INS.

Retrospective analysis concerned medical records of 23 patients (12 girls and 11 boys) hospitalized due to the first episode of INS in the Department of Pediatric Nephrology of Wrocław Medical University in the years 2012-2014. The results of laboratory tests and the frequency of the characteristic symptoms of the disease were analyzed.

The onset of INS was preceded by infections in 69,6%. Infection of upper respiratory tract occurred in 52%, conjunctivitis in 8.7%, diarrhea in 8.7%, urinary tract infection in 4.3%. In 73% of patients the onset of the disease appeared in winter or spring. On admission patients presented with the following symptoms: peripheral edema (82.61%), eyelid edema (73.91%), ascites (52.17%), hypertension (13%). The mean values of serum parameters were as follows: albumin 1.9 g/dl, total protein 4.3 g/dl, total cholesterol 394 mg/dl, triglycerides 423 mg/dl. Hypoproteinemia concerned 91% of children, hypercholesterolemia was present in 96% of patients.

The first onset of INS occurred mainly in winter or spring and 2/3 of them were preceded by infection. Severe hypoalbuminemia, hypercholesterolemia and the severity of clinical symptoms on admission suggested the delayed diagnosis of the first episode of INS.

**Keywords: idiopathic nephrotic syndrome, onset**



## **The analysis of the impact of devices emitting white noise on the behavior of children.**

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White noise is a sound which spectrum is balanced in most of the audibility range, with no sharp peaks in it. This kind of sound is heard by a fetus in the womb. There are many devices emitting white noise designed for calming children.

The evaluation of utility and frequency of the use of devices emitting white noise.

The study was conducted by performing an anonymous, online questionnaire. The survey was divided into 3 parts: the demographic data, the way of using devices emitting white noise, an impact on child's behavior.

580 people took part in the survey: 576 women and 4men. The most commonly used devices emitting white noise are Szumiś (40.3%), Whisbear (32.8%) and sound recordings imitating electrical devices (30.9%). 24.7% of parents use devices 3 and more times a day, 24.1% twice a day and 23.3% use them occasionally. The main purpose is to put a child to sleep (86.9%). Almost half of parents (48.1%)puts the device to a child's crib. 497(85.7%) respondents admit that a child falls asleep better after applying white noise. 80% of parents think that this sound causes the child to become calm faster and stop crying. Over 97% of respondents did not notice the negative effects of using white noise in their children.

The emitting devices can be complementary to other methods of calming young children. The devices, after meeting the appropriate technical criteria, may be recommended by pediatricians to facilitate calming children. The long-term impact of using the devices too close from a child and the effect on the child's psychomotor and psychological development is unknown. Parents should keep their children within safe distance from devices while using them.

**Keywords: children, sleep, parents, calming children, electronical devices, white noise**

## **Structural and hereditary urinary tract anomalies as etiological factors of chronic kidney disease in children**

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Structural urinary tract anomalies are the leading etiological factor of chronic kidney disease (CKD) in children. The role of hereditary disorders in CKD pathogenesis increases.

To analyze structural and hereditary urinary tract anomalies as causative factors of CKD in children, with particular regard to patients' age and gender.

The retrospective analysis considered medical records of 174 children diagnosed with CKD, hospitalized in the Department of Pediatric Nephrology between 2011 and 2017. Patients diagnosed with urinary tract anomalies (117) were selected. Out of them 79,5% presented with structural anomalies (SA) and 20,5% - with confirmed hereditary disorders (HD). Patients were divided into three groups, regarding their age: up to 2 years, 2-12 years and above 12 years.

In the youngest group the dominant gender was male, in the other groups the gender distribution was equal. In the whole CKD population, SA were diagnosed in 53,4% of patients and HD – in 13,8%. Among SA, obstructive nephropathies were the most common, regardless of the patients' age. In children up to 2 years of age, the dominant obstructive anomaly were posterior urethral valves. In older girls, neurogenic bladder was the most common dysfunction. Among HD, rare genetically determined diseases were more common than polycystic kidney disease.

Structural urinary tract anomalies were the causative factor of over a half of CKD cases in the population. Posterior urethral valves were an important etiological factor of CKD in younger boys. In older girls, the most common anomaly leading to CKD was neurogenic bladder.

**Keywords: chronic kidney disease, urinary tract anomalies, hereditary renal disorders**

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# SESSION OF PHARMACY AND CLINICAL PHARMACOLOGY

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## **Preliminary pharmacokinetic studies of new compound KSK19 with potential pro-cognitive pharmacological activity**

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KSK19 is a new compound synthesised at the Department of Technology and Biotechnology of Drugs UJ CM. Preliminary studies conducted on mice showed its dose dependent pro-cognitive activity, therefore as the next step of investigation pharmacokinetic studies were performed.

The aim of this project was to determine the basic pharmacokinetic parameters of KSK19 after single intravenous (i.v.) or intraperitoneal (i.p.) administration to mice with particular emphasis on distribution to the central nervous system (CNS).

Experiments were performed on CD-1 mice. KSK19 was administered i.p. at the dose of 15mg/kg in 1% Tween, or i.v. at the dose of 5mg/kg in the mixture of PEG200 and water (3:7; v/v). Three animals were sacrificed at each designated time point namely at 0.0833, 0.25, 0.5, 1, 2, 4, 6, 8, 12 and 24h after administration. Serum and brains were collected and stored at -30°C until analysis. Concentrations were determined using a validated LC-MS/MS method and pharmacokinetic parameters were calculated by the aid of Phoenix WinNonlin software.

KSK19 has high bioavailability after i.p. administration. It has a large volume of distribution ( $V_d$ ) and a relatively long half-life time equal 3h in serum and 5h in brain. The brain to serum ratio calculated based on the AUC (area under the concentration-time curve) values equaled ca. 160. The concentration-time profile was best described by the two compartment pharmacokinetic model.

KSK19 very well penetrates into brain tissue which is desirable for the compound for which CNS is the main pharmacological target. The large  $V_d$  indicates extensive tissue distribution.

**Keywords: KSK19, pro-cognitive, pharmacokinetic, intraperitoneal, intravenous**

## The effect of carvedilol alone and in combination with sorafenib on IL-8 secretion by melanoma cells

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Malignant melanoma is a highly metastatic cancer with poor prognosis. Melanoma cells secrete a variety of cytokines which may regulate functions of both malignant and stromal cells, possibly affecting the mechanism of tumor progression. It has been shown that expression of IL-8 by melanoma cells correlates with their metastatic potential *in vivo*. Our recent studies revealed the synergistic, growth-inhibitory effect of carvedilol and sorafenib on melanoma cells. It is interesting to study whether each of the drugs and their combination modulate IL-8 secretion by melanoma cell lines. The effect of both drugs used in combination on IL-8 secretion has not been investigated yet.

The purpose of the study was to evaluate the influence of carvedilol and sorafenib alone and in combination on IL-8 secretion by IL-1 $\beta$ -stimulated melanoma cells *in vitro*.

The A2058 and C32 cells were used as a model of skin melanoma. Cells were stimulated with IL-1 $\beta$  and then exposed to carvedilol (2,5; 5  $\mu$ M) and sorafenib (1; 5  $\mu$ M) separately and in combination of both drugs for 48 hours. The amounts of IL-8 secreted into the culture medium were determined with the use of ELISA assay. The concentrations of IL-8 were normalized to the total protein content.

The results of this study demonstrated that carvedilol and sorafenib modulated secretion of IL-8 by A2058 and C32 melanoma cell lines. When cells were treated with combination of both drugs the inhibition of IL-8 secretion was more pronounced than when the drugs were used separately.

Hence, it can be suggested that simultaneous treatment with these drugs could allow lowering the doses leading to its less toxic side-effects.

**Keywords:** carvedilol, sorafenib, melanoma, interleukin 8

## **Evaluation of melanogenesis in melanocytes HEMn-DP cultured in cobalamin deficiency conditions**

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Melanins are biopolymeric, macromolecular pigments mainly located in the skin, hair, eye and ear. They are produced in process of melanogenesis by melanocytes. Cobalamin (Cbl) - vitamin B12 is indispensable in many metabolic processes. Its deficiency can lead to anemia, neurological as well as dermatological disorders, including hyperpigmental skin changes resulting from excessive melanin production.

The aim of the study was to examine the impact of cobalamin deficiency on melanogenesis in human melanocytes.

Normal human melanocytes, dark pigmented (HEMn-DP) were used as an in vitro model system. Deficiency of vitamin B12 in cells was obtained through 28-days cell culture in the presence of hydroxycobalamin c-lactam. The impact of Cbl deficiency on melanogenesis in melanocytes was determined by tyrosinase activity and melanin content measurements.

The obtained results have shown that vitamin B12 deficiency has an impact upon process of melanogenesis in human melanocytes. Moreover, the data pointed out that Cbl deficiency leads to increase of tyrosinase activity and stimulation of melanin synthesis in melanocytes.

This phenomenon may explain the mechanism of hyperpigmental skin disorders due to hypocobalaminemia in vivo.

**Keywords: vitamin B12, melanogenesis, melanocytes**

## **Fast detection of genetic variant in glucagon-like peptide-1 (GLP-1) receptor gene in clinical pharmacogenetics**

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Incretin hormones regulate glucose-modulated insulin secretion by pancreatic beta-cells. The two incretin hormones, GLP-1 and GIP are inactivated by dipeptidyl peptidase-4 (DDP-4), the proteolytic enzyme soon after they secreted from intestinal cells. GLP-1 receptors are involved in the DDP-4 inhibitor action mechanism and GLP-1 responses may help predict the efficacy of DDP-4 inhibitors. A recent study reported that DDP-4 inhibitors could activate incretin receptors and influence the gut-to-pancreas neural axis. The efficacy of DDP-4 inhibitors might be affected by GLP-1 receptor and the altered structure of GLP-1 receptor could determine the difference in response to DDP-4 inhibitors.

The aim of the study was to evaluate the polymorphism G/A in glucagon-like peptide receptor gene (GLP1R) among 30 patients of the Department of Pediatric Cardiology.

Genomic DNA was extracted from the whole blood samples with the use of Quick Blood kit. Electrophoresis in 0.4 % agarose gel and spectrophotometric analysis (Shimadzu UV-1800) were performed to assess qualitative and quantitative characteristics of genomic DNA extracts, respectively. Genotyping of rs3765467 in GLP-1 receptor was performed by PCR and high resolution melting (HRM) temperature analysis with the use of EvaGreen dye chemistry. BioRad melting analysis software was used to obtain normalized melting curve and establish genotype of each patients.

In the analysed group of patients homozygote and heterozygote carriers for loci rs3765467 were found.

HRM analysis has been found to be fast and valuable method of genotyping and is suggested to be useful in pharmacogenetics of DDP-4 inhibitors.

**Keywords:** dipeptidyl peptidase-4 inhibitor, glucagon-like peptide-1 receptor, pharmacogenetics



## **Moxifloxacin decreases viability and induces G2 | M phase cell cycle arrest and DNA fragmentation in melanoma cells**

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Fluoroquinolones (FQ) are antibacterial synthetic antibiotics. Their mechanism of action is based on inhibition of two bacterial enzymes- DNA gyrase (topoisomerase II) and topoisomerase IV. FQ have been demonstrated to display activity not only against bacterial topoisomerase II but also against eukaryotic topoisomerase II $\alpha$ , thus showing cytotoxicity towards various mammalian cancer cells. Moxifloxacin is fourth generation fluoroquinolone, characterized by greater safety and fewer side effects than older compounds from this group.

The aim of study was to examine the impact of moxifloxacin on two melanoma cell lines- COLO-829 and C32 in terms of its anti-cancer activity.

Human melanotic- COLO-829 and amelanotic- C32 cell lines were used as an in vitro model system. The cells were treated with various moxifloxacin concentrations (0,1-1,0 mmol/l) for 24, 48 and 72 h and examined by the WST-1 assay. Cell cycle distribution and DNA fragmentation analyses were performed using fluorescence image cytometer NucleoCounter NC-3000.

The obtained results have shown that moxifloxacin decreases the viability of COLO-829 and C32 melanoma cells in a concentration- and time-dependent manner. Following the cytometry analyses, the analysed drug was found to induce G2|M phase cell cycle arrest and DNA fragmentation- late hallmark in the apoptosis pathway in both tested cell lines.

The results are promising and show that fluoroquinolones can also be considered as potentially useful agents in treatment of human cancers, such as melanoma.

**Keywords: moxifloxacin, melanoma, DNA fragmentation, cell cycle, apoptosis**

## **Application of UV-Vis spectroscopy to examination of the antioxidant properties of mucolytic drugs**

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Inflammation accompanies infections of the respiratory tract. During the inflammation a large amount of free radicals are formed. Free radicals as the active molecules modify and damage cells and tissues structures. Free radical formed during infections of the respiratory tract were responsible for toxic effects in organism.

The aim of the study was comparative analysis of antioxidant properties of the mucolytic drugs like ambroxol, bromhexine and acetylcysteine.

UV-Vis spectrophotometry was used to examine chosen mucolytics drugs interactions with model free radicals DPPH (2,2-diphenyl-1-picrylhydrazyl). DPPH is a standard of free radicals with localization of unpaired electrons on nitrogen atom. Recorded spectra of absorbance by the used UV-Vis spectrophotometer Genesys 10S (Thermo Scientific Company, USA).

Absorption of UV-Vis spectra of DPPH (reference), and DPPH interacting with the tested mucolytic drugs were compared. For all tested drugs kinetics of their interaction with DPPH up to 30 minutes were obtained. Additionally % inhibition was calculated for the study drugs at the 30th minute of interaction with DPPH. Acetylcysteine had the highest value.

All tested drugs has antioxidant properties. The strongest interaction with DPPH were observed for acetylcysteine. The lowest interaction with DPPH were observed for ambroxol. The kinetic studies indicated that the mucolytic drugs differ in the speed of interaction with DPPH. Studies has shown usefulness UV-Vis spectrophotometry for obtaining information on interactions of selected mucolytic drugs with model free radicals.

**Keywords:** UV-Vis spectroscopy, free radicals, mucolytic drugs, DPPH

## **Modification of the cytotoxic effect of sodium dichloroacetate (NaDCA) on MCF-7 and SKOV cancer cells in the presence of Metformin**

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Sodium dichloroacetate is a pyruvate dehydrogenase kinase(PDK)inhibitor and thus enhances the flux of pyruvate into the mitochondria by indirect activation of PDK. In the effect sensitize cells to apoptosis is increased and cell division is braked. Metformin is a derivative of biguanide and it has been use to treat patients with diabetes type II. It, among the others,increases glucose transportation to cells.In patients with thisdisease treated by Metformin the risk of cancer is significant lower. Metformin has also been shown to be beneficial in patients already suffering from cancer.

The aim of the study was the evaluation of viability of MCF-7 and SKOV-3 cancer cells exposed to sodium dichloroacetate in the presence of Metformin.

In the study, MCF-7 and SKOV-3 cells were analyzed. The influence of NaDCA(1,65-100mM)on viability of those cells in the presence of Metformin (12,5;25;50mM) was analysed. After 48 hours, tests were performed: WST-1, LDH and CVDE test.The lactate concentration was determined for selected cultures.

After 48 hours exposure of MCF-7 and SKOV-3 cells to NaDCA, concentration-dependent reduction in the number of cells in cultures was observed. The results of the tests show that the presence of already 12.5 mM Metformin in the medium significantly reduces the viability of MCF-7 cells as well as SKOV-3 treated with NaDCA. The use of higher concentrations of Metformin (25 and 50mM)completely eliminates cells from the culture.

Metformin intensifies the cytotoxic effect of NaDCA on the test cancer cells.

**Keywords: cancer, sodium dichloroacetate (NaDCA), metformin**

## Splitting tablets administered in Parkinson's disease

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Tablet splitting is a common practice during pharmacotherapy. Shortage of certain drug on pharmaceutical market is a reason for subdivision. Due to narrow therapeutic index, accuracy in tablet splitting is crucial.

In research, emphasis is placed on splitting tablets administered in Parkinson's disease. It is a neurodegenerative illness of the central nervous system caused by dopamine deficiency. Tablets were split by patients affected by this condition. Symptoms included inter alia tremor and stiffness of limbs influence ability to conduct proper subdivision.

Akineton (containing biperiden hydrochloride) and Biomentin (containing memantine hydrochloride) had been used during reasearch. Both of these drugs have score line but Akineton differs significantly in size. Microtomographic scan of tablet was taken. 46 Akineton tablets and 52 Biomentin tablets were weighted and then hand broken by patients. Next, mass of tablet's halves were examined. Results had been made based on comparison of mass loss and compatibility with European Pharmacopoeia standards concerning halves uniformity.

Based on the studies Biomentin's parameters performed better, given that average weight loss was lower and the greater part fulfilled the criteria of Pharmacopoeia, compared to Akineton.

These results may contribute to improvement of tablet's parameters leading to enhancing precision of splitting.

**Keywords:** accuracy in tablet splitting, tablet splitting, Parkinson's disease

## **Detection of CYP3A4\*1G genetic polymorphism and its impact on the clinical pharmacotherapy**

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Genetic polymorphism of cytochrome P450 involved in drug metabolism is known to affect pharmacologic response to drug, thus attracting particular interest in pharmacogenetics. Cytochrome CYP3A4 is responsible for the metabolism of many drugs including diltiazem, clopidogrel, fentanyl, atorvastatin and amlodipine.

Altered activity of CYP3A4 resulting from its genetic polymorphism might have an influence on the metabolite formation and pharmacologic efficiency of these drugs. CYP3A4\*1G is a single nucleotide polymorphism present in intron 10 of CYP3A4 gene with a possible enhancer and promoter activity. The presence of CYP3A4\*1G alleles can be associated with altered pharmacokinetics of several groups of drugs.

A total number of 35 patients were recruited for participation in the study. Whole blood delivered from Department of Pediatric Cardiology and genomic DNA was extracted with use commercially available kit Quick Blood. The extracts were qualitatively and quantitatively estimated by gel electrophoresis and spectrophotometric study, respectively. PCR reaction was performed in a total volume of 25 ml and high resolution melting analysis was completed with the use of EvaGreen chemistry dye and Biorad software.

Carriers of CYP3A4\*1G allele were detected among the analysed group of patients.

Detection of CYP3A4\*1G carriers is an essential approach in pharmacodynamics of many drugs used in routine therapy.

**Keywords: cytochrome P-450, pharmacogenetics, high resolution melting**

## Anticancer activity of pterostilbene on human colon cancer cell lines

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Colon cancer is one of the leading causes of morbidity and mortality worldwide. Many studies reveal that dietary phytochemicals may exert chemopreventive and therapeutic effect against colorectal cancer. One of the promising phytochemicals is pterostilbene, a naturally occurring stilbene found primarily in blueberries. Studies showed that pterostilbene exhibited the hallmark characteristics of a valuable anticancer agent. Despite these reports data on its activity against colon cancer cells are still limited.

The aim of this study was to evaluate the anticancer activity of pterostilbene on human colon cancer cells *in vitro*.

The HT-29 and Caco-2 colon cancer cells were cultured using standard techniques and exposed to pterostilbene at different concentrations (5-100  $\mu$ l). Antiproliferative activity of pterostilbene was determined by colorimetric immunoassay based on BrdU incorporation into cellular DNA. Apoptosis was measured using the Cell Death Detection ELISA kit following the manufacturer's protocol. This assay determines apoptosis by measuring mono- and oligonucleosomes in the lysates of apoptotic cells.

The study revealed that pterostilbene caused dose-dependent suppressive effect on proliferation of Caco-2 and HT-29 cells. ELISA assay indicated its proapoptotic potential against colon cancer cells. Moreover, both colon cancer cell lines showed different sensitivity toward pterostilbene.

The findings of the study revealed antiproliferative and proapoptotic properties of pterostilbene in a wide range of concentrations on human colon cancer cells. However, further studies should be carried out to seek for the molecular mechanisms of pterostilbene activity.

**Keywords:** pterostilbene, proliferation, colon cancer, HT-29, Caco-2

## Optimization of risperidone release from terpolymeric drug carriers

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Risperidone (RSP) is one of the most popular antipsychotics in treatment of schizophrenia. RSP is available in various formulations, i.e. oral tablets, oral solution, orodispersible tablets and a long-term acting injection (LAI). RSP release from commercial LAI occurs from 3 to 7 weeks, while maintaining the therapeutic concentration between 4 and 6 week.

The aim of the study was to synthesize and select an optimal polymer to achieve faster and prolonged release of RSP.

The synthesis of the poly(D,L-lactide-co-glycolide-co-trimethylene carbonate) P(D,L-LA:GA:TMC) (75:15:10; 96,3 kDa), P(L-LA:GA:TMC) (77:14:9; 52,4 kDa), poly(D,L-lactide-co-glycolide-co- $\epsilon$ -caprolactone) P(D,L-LA:GA:CAP) (57:19:24; 25,4 kDa) and P(L-LA:GA:CAP) (57:19:24; 58,8 kDa) was carried out in bulk using Zr(acac)<sub>4</sub>. Degradation was carried out in PBS solution (pH 7,4; 37°C; 240 rpm). The concentration of the released RSP was determined by HPLC. Structural, thermal and surface properties were studied by NMR, GPC, DSC and SEM respectively. The RSP was released from P(L-LA:GA:CAP) matrix during 117 days in two-stage manner and during 75 to 166 days with three-stage release manner from other matrices.

The composition and chain microstructure analysis showed no significant differences, also uncontrolled bursts and significant fluctuations of RSP were not noted. Molecular weight and glass transition temperature studies revealed a gradual decrease. The morphological analysis showed a solid surface without pores and cracks.

The optimal release of RSP from polymer matrices can be achieved by formulation of terpolymer blend contain P(L-LA:GA:CAP) with P(D,L-LA:GA:TCM).

**Keywords:** risperidone, polymers, schizophrenia, drug carriers

## **Monitoring of the dietary supplementation by pregnant women as a part of the Pharmaceutical Care System**

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The popularization of dietary supplements for pregnant women results in its high sale. These products aren't a subject of controls as in the case of pharmaceuticals, what cause a negative impact on the health of pregnant women.

The aim of the study was to verify the knowledge of women about dietary supplements and their opinion about the role of a pharmacist in controlling substances used by women expecting a child.

The data was collected with an anonymous online survey filled the Internet. Form included 20 questions. There were 201 questionnaires collected. Both women who have children and the childless have taken participated in the survey. 95% respondents think that women should use vitamins and mineral preparations during pregnancy. However they have a problem with indication which vitamins and elements are vital. Only 20,4 % respondents answered correctly for a question „When should you start supplementing with folic acid?”. 64,7% respondents pointed the Internet as the main source of knowledge about supplementation. As many as 89,6 % of the respondents answered affirmatively for a question “If there was a pharmaceutical care in Poland, would you like to consult the pharmacist about the supplementation you should use during your pregnancy?”

The results underline respondents awareness that during pregnancy vitamins and mineral supplementation should be supplied. However, the study showed a low level of knowledge about the issue. The respondents do not notice basic differences between the dietary supplement and the medicinal preparation.

All the above data reveal how important is the problem of the lack of Pharmaceutical Care System in Poland.

**Keywords: pregnant women, dietary supplements, Pharmaceutical Care**



## **Influence of ultraviolet irradiation on antioxidant properties of butyric acid**

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Butyric acid is the main source of energy for colonocytes. Butyric acid is used in many intestinal diseases because has anti-inflammatory and antioxidant properties. To keep properties of butyric acid his must be properly stored.

The changes of the free radical scavenging activity of butyric acid after UV-irradiation were examined. The kinetics of the interactions of butyric acid with free radicals was tested.

The model DPPH free radicals were used. Free radicals were tested by UV-Vis spectrophotometry. The absorbance spectra of the test samples were recorded using a UV-Vis spectrophotometer Genesys 10S (USA). The spectra analysis was carried out using the OriginLab program (USA). Butyric acid was irradiated by Medisun 250 lamp (Germany).

The UV-Vis spectra of DPPH and DPPH in contact with nonirradiated and UV-irradiated butyric acid were measured. Butyric acid decreased absorbance of DPPH free radicals as the result of the antioxidative character of the samples. The antioxidative character of nonirradiated and UV-irradiated butyric acid was confirmed by the UV-Vis studies. Free radical scavenging activity increase after UV-irradiation of butyric acid, and the absorbance of DPPH free radicals more decreased by contact with UV-irradiated tested sample.

Butyric acid should not be storage under ultraviolet irradiation, because of change its antioxidative interactions. This studies confirmed usefulness of UV-Vis spectrophotometry to determine of the antioxidant character of butyric acid. These spectroscopic methods may be used to find the optimal storage conditions of tested sample.

**Keywords: butyric acid, antioxidant, UV-irradiation, UV-Vis spectrophotometry**

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# **SESSION OF PHYSIOTHERAPY AND PHYSICAL ACTIVITY**

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## Influence of laterality on selected stabilometric parameters

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Laterality leads to the formation of the preference in one side of the body during various activities of everyday life. The point of our considerations is the question, if the domination of the motor system can change the control way of motor skills and if it does have any influence on keeping stable standing posture.

Evaluation of the relationship between laterality and postural balance. Material and methods: The examined group consisted of 101 students aged 20 to 25 years ( $\bar{x} = 20 \pm 1.10$ ).

The study comprised of three parts: a questionnaire, laterality test, platform stabilometry test. Postural stability was tested four times, using the Platform Zebris PDM with Software Foot Print under static conditions.

Among subjects 68,3% show lateralization of homogeneous profile. SPL in homogeneous laterality and crosswise group did not differ significantly in the study with open eyes ( $t=0.29$ ,  $p>0.76$ ), in the closed eye test ( $t = 0.9$ ,  $p> 0.36$ ), in the open dominant eye study ( $t=1.12$ ,  $p> 0.26$ ) and in the non-dominant eye ( $t = 1.48$ ,  $p> 0.14$ ). Similarly, there were no differences between groups in AoE (all  $p> 0.06$ ) and aoE (all  $p> 0.26$ ).

In the comparative study 1 and 2 in people with single-sided laterality SPL with eyes closed was statistically significantly longer than in the case of open eyes ( $p$

**Keywords: laterality, Platform stabilometry**

## Physical activity of pregnant women

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Physical activity(PA) is increasingly promoted due to the growing pandemic of obesity. Currently, more women start their adventure with sport, but during the pregnancy, they give up training because of concerns about fetal safety

The aim of this work was to establish women's level of PA during pregnancy and evaluate women's self-esteem and associate it with the level of PA.

We conducted a study on pregnant women in Silesia. We used PPAQ (Pregnancy Physical Activity Questionnaire) questionnaire, which consists of 32 questions and is divided into four main parts and Rosenberg Self Esteem Scale.

The study was conducted on 490 pregnant women aged  $26.1 \pm 3.9$ . Among respondents in the first trimester of pregnancy there were 9.8% ( $n = 48$ ), in the second - 31.4% ( $n = 154$ ), and in the third group 58.8% (288). 65.3% ( $n = 320$ ) of them stated that during their pregnancy their physical activity decreased, in 5.3% ( $n = 26$ ) it increased, and in 29.4% ( $n = 144$ ) remained unchanged. Before pregnancy, 67.8% ( $n = 332$ ) of the respondents were physically active. Average score in the PPAQ was  $204.1 \pm 91.4$ . The most average weekly energy expenditure (MET h/ week) is intended for low-intensity activities as in housework and family care.

Not enough pregnant women are physically active. This may be due to a lack of knowledge on this subject and concerns about the safety of the child. Pregnant women, who want to start or continue PA when being pregnant, should be evaluated by their doctor for medical and obstetrical factors which may be contraindications for exercising .

**Keywords:** physical activity, pregnancy, PPAQ

## Parental awareness of the correct choice of footwear for pre-school children

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Shoes have a significant impact on the baby's foot development. The right choice of footwear is extremely important, and specialists in this field warn against the harmful effects of inappropriate footwear not only on the foot, but also on the posture of the child. A significant proportion of the shoes available on the market still do not meet the relevant criteria of 'good footwear'.

The aim of the study was to determine the level of parents' knowledge on the correct choice of footwear for a child of pre-school age in the aspect of the occurrence of foot abnormalities.

96 pre-school children aged 3 to 7 years ( $x=4.8 \pm 1.1$ ) were included in the study, of which 47.9% were girls and 52.1% boys. The research tool was the author's questionnaire, which was conducted among parents. The questionnaire consisted of 33 questions concerning, among others, the type of footwear, its selection, the occurrence of foot defects and the parents' knowledge about them.

Properly selected footwear for a child could be initially found in 77.1% of the respondents, however, after a detailed analysis, the result was corrected to 62.5%. When buying shoes, 62.5% of parents pay attention to the fact that the heel is rigid, 35.4% only take into account the price, 32.3% choose shoes with a very soft sole, 21.9% choose shoes with a high upper, 8.3% rely on the knowledge of the seller, and 2.1% pay no attention to anything. As many as 92.7% of respondents are aware of the other health consequences of poorly chosen shoes.

Parents pay special attention to the choice of shoes for their children, and their knowledge of this subject is high. They are aware of the health consequences of mismatched footwear.

**Keywords: children, foot defects, footwear**

## Awareness of parents on the use of electronic equipment by children in pre-school age

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Movement is an indispensable need of every human being, especially, of children. In times of increasing overwork of parents, more and more children spend their time in static positions.

The aim of the work was to assess the awareness of parents with respect to the time spent by their children in front of electronic devices.

We examined 40 people (20 women and 20 men) aged from 28 to 43 ( $34.88 \pm 3.86$ ) having children aged 3-6 ( $x = 4.5 \pm 1.12$ ). Among children, 60% of respondents were girls and 40% were boys.

The research method was the author's questionnaire consisting of 15 questions concerning, among others: time spent by children and parents in front of electronic devices, forms of spending free time by parents, as well as types of additional activities for children and the time allocated to them.

It is noted that parents spend between 10 and 540 ( $x = 113.64 \pm 96.3$ ) minutes a week in front of electronic equipment. 4-year-old children use electronic devices from 30 to 300 ( $x = 82.89 \pm 61.14$ ) minutes per week compared to 6-year-old children from 20 to 180 ( $x=34.28 \pm 39.75$ ). 75% of children attend additional classes (46.66% for physical activities, 46.66% for educational and physical activities).

It was noted that the free time that children spend passively and actively is comparable. Most of the examined children attend additional classes, including largely physical activities, which increases the physical activity of pre-school children.

**Keywords: physical activity, free time, children**

## Physical activity among students

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Physical effort should be an essential element of every human being's life. Physical activity has a positive impact on many areas of life. It helps to fight stress and reduces the risk of cardiovascular diseases.

The aim of the questionnaire was to learn about how many students practice sport.

The survey was conducted by anonymous questionnaire on a group of 100 university students. 59% were woman and 41% were man.

91% of the respondents practice sport at least once every two weeks. 63% describe themselves as very active in sport and only 11% as not active enough. The most popular activity among the respondents is running (48 responders). The second place is taken by exercises at the gym (37 responders). Most people practice several types of sport. Football is particularly popular among men and women are more likely to choose swimming than men. Weight loss is the leading motive among women, and body improvement and competition are the main motives among men. 34% treats physical effort as a way to fight stress.

Sport is an important part of most respondents' lives. It should be an objective to popularise the practice of sport and invest in locations where you can practice for free.

**Keywords: sport, students, activity**



## **Volleyball players' injuries and rehabilitation**

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Suffering from injuries is very common in volleyball. Even without any physical contact with the opponent volleyball players are a trisk being out of action.

The aim of the study was to analyze types of injuries among volleyball players and applied rehabilitation.

59 professional and amateur volleyball players took part in the study. The age of sportsmen ranged between 12 and 34 years. They are players of Plus liga, 2nd league and amateur leagues. The questionnaire consisted of seven parts: metrics and questions of ankle, knee, hip, shoulder, elbow, hand and wrist, muscle injuries.

The results of the research showed that 59 volleyball players were out of action because of playing volleyball. Lower limbs were mainly affected. These injuries in 30players and hand or wrist injuries in 37players. The most common treatment include: kinesiotaping, massage, immobilization.

The risk factors were the time weekly spent on playing matches and trainings (overloading, overtraining but also toolonglet-up in trainings) and situations on pitch (impact with a teammate, fall). Age, height, position on pitch doesn't have influence of being injuries.

**Keywords: rehabilitation , injuries, Volleyball, sport , treatment**

## **Place of residence and quality of aging: evaluation and comparison on countryside and medium-sized town in habitants**

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Aging is a natural process that happens in every organism. It leads to deleterious changes in human body. Over the past century lifespan is still increasing consequently, seniority too. It is very important that this tendency is tied with rising the quality of elder's life and fulfilling their needs.

The aim of the study was to evaluate and compare quality of seniors' life living at countryside and medium-sized towns.

78 people took part in the research: 55 women (69,33%) and 24 men (30,77%) aged 65-94 ( $x=74,90$ ;  $SD=7,02$ ) living in Lisow and Piekary Slaskie. Method used for the research was the questionnaire consisting of metrical part and closed questions connected to the research problem and questionnaires: Successful Aging Index and Yesavage Scale.

The average of the following domains were: health/well-being - 3,87, sense of security - 3,97, retrospective factors - 3,87. The average of SAI was 11,72 ( $SD=1,20$ ). Most common activity among elders in both locations were watching TV(100%) and household duties (60,26%). Spending time in an active way was more popular for Lisow inhabitants (67,74%) than Piekary Slaskie inhabitants (40,42%). Yesavage Scale: Only one person had symptoms of depression.

The quality of seniors' life is quite good. Place of residence has important impact on the quality of aging; sex and age has no impact on it. The assessment of health and sense of security is better among elders living at countryside than elders living at town. Villagers are more judgemental about their life than citizens. The highest level of respondent's education is, the highest quality of aging is. Examined elders has no depression.

**Keywords: quality of aging, place of residence, elders**

## **Parents' and their children's awareness of postural defects development and prophylaxis**

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Knowledge on the development of disorders and pathologies within body posture, their consequences and risks to health are key issues in adequate prevention of poor posture.

The aim of the study was to assess the level of parents' and their children's knowledge on postural defects development and prevention.

The study included 170 subjects (50% parents, 50% children). 31% parents had higher education, 48% secondary education and 21% respondents had vocational education. 40% children attended gym, 44% and 16% teenagers attended high school and technical college, respectively. The study tool was an author questionnaire that included questions concerning knowledge on postural defects. For statistical analysis Excel software package and STATISTICA 12 programme were used.

85% parents and 92% children declared that they possessed full knowledge on postural defects. Moderate knowledge was indicated by 58% adults and 61% teenagers. 81% children and 79% parents recognised that they were aware of the correct standing and sitting position. A statistically significant difference was noted between women and men regarding subjective assessment of their knowledge on postural defects ( $p=0,0024$ ) and between the level of education and knowledge on the topic ( $p=0,001$ ).

Level of knowledge on postural defects development and prevention in the opinion of parents and children is not satisfactory. There is a necessity to educate parents and children on prevention and therapy of postural defects.

**Keywords: postural defects, scoliosis, flat foot**

## The occurrence of back pain in high school students

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Back pain is an increasingly problem among young people. Numerous trials show that back pain applies not only to adults but also to more and more young people.

The aim of the study was to verify the incidence of back pain. Additionally, the place of pain in the spine and its average intensity as well as the type of spending free time were examined.

The study was conducted among high school students in the region of Silesia in Poland. The study group consisted of 92 people aged between 15 and 19 years old ( $\bar{x}=17,4\pm 1,21$ ) Women accounted for 48.9% and men 51.1%. The VAS scale and the author's questionnaire was used as a research tool. The results were analyzed using an Excel spreadsheet.

85.9% of respondent at least once in their lifetime experience back pain. During the last month, back pain concerned 58.7% of students. 46,8% of the respondents indicated the lumbar spine has the most frequent localization of pain. The average intensity of pain in the spine was 4.5 degrees. It should be noted that among 13,9% of student reached as much as 7.8 degrees. 30,4% of the respondents claim that their physical activity is insufficient. The most of students passively spends his free time (playing computer games or browsing the Internet).

Back pain concerns a very large group of young people. Passive spending of free time by students in a special way may contribute to the pain of the spine.

**Keywords: VAS scale, back pain, physical activity**

## Body painting as a tool for long-term learning

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Anatomy is a very broad branch of science, the learning causes many difficulties for students of medical faculties. Mastering all the required content is associated with the enormity of time spent, and the effectiveness of standard teaching methods is not high enough, which translates into a negative impact on later professional work.

The aim of the study was to collect information on the most frequently used teaching methods and individual ways of learning the anatomy of the respondents.

Examined 133 medical students (76,7% women i 23,3% men). The analysis was made on the basis of a questionnaire containing 21 single-choice or descriptive questions.

Studies have shown that the majority of students (92.5%) prefer learning through practical classes. This induce to look for innovative ways of education that will allow you to learn more efficient. Body painting as a method based on drawing selected anatomical structures on the body of a living human was being used in the form of didactic classes only in 21% of students, but 38.7% said that they took this form of learning individually and had the effect of memorizing knowledge on a long-term basis. In students's opinion the most crucial factors that influenced the results were the involvement of few senses at the same time, palpation experience and biofeedback.

Our research confirms the effectiveness of the method of painting anatomical structures in the teaching of anatomy, especially the anatomy of superficial structures. The problem is not a very high number of students using the method, low prevalence and access to such solutions.

**Keywords: anatomy, Body Painting, Anatomy Study, Long Term Learning**

## Impact of physical activity on self-esteem level in women after mastectomy

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Physical activity of woman who had undergone mastectomy is a form of support to help women return to full physical and mental health.

The aim of the study was to evaluate impact of physical activity on the level of self-assessment in women after mastectomy.

The study was conducted among 60 women from the Silesia Province who were members of the "Amazons" Post-Mastectomy Women's Club. The average age of the respondents was 66 years  $\pm$  7.6. The tools used in the study included: an author questionnaire, the International Physical Activity Questionnaire (IPAQ) and Morris Rosenberg Self-Esteem Scale (SES).

The level of physical activity in 78.33% of the surveyed women was evaluated as high, in 16.67% as sufficient and in 5% as insufficient. In the opinion of the surveyed women the level of self-esteem in 42% of them was defined as average, in 28% as low and in 15% as high. The analysis of the impact of physical activity on the level of self-esteem among women after mastectomy showed a statistically significant positive correlation ( $r = 0.38$ ).

Physical activity has a significant impact on the level of self-esteem of women after mastectomy.

**Keywords: physical activity, self-esteem, mastectomy, breast cancer**

## **Microbe's training- You never know how many of them are your workout partners**

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Pathogenic strains of bacteria can survive on gym equipment surfaces. Prolonged contact, scratches and the use of anabolic steroids can lead to gym-acquired infections. Disinfectants are available at every gym to prevent it. Are they properly used?

The aim was to evaluate the microbial contamination of the gym equipment surfaces, also to define frequency and effectiveness of disinfection at the gym.

We obtained 100 samples from 4 gyms in Wrocław. The swabs were taken of gym equipment surfaces, some were taken twice before and after disinfection. Samples were placed on growth media such as blood agar and MacConkey agar. After 48 hours of incubation grown colonies were identified using standard microbiological tests (bioMerieux API tests). We carried out observations on proper usage of disinfectant by gym members.

All surfaces contained from 1 to 6 strains of bacteria such as: *Staphylococcus aureus* (41%), *Acinetobacter* spp. (23%), *Enterococcus* spp. (14%), *Pseudomonas* spp (14%), and *Enterobacter* spp. (6%). Gram-negative bacteria, and bacteria with high pathogenic potential (*S.aureus*, *S.agalactiae*, *A.baumannii*) were more frequently found on metal surfaces (25%, 82%, respectively) than rubber surfaces (11%, 42%, respectively). More Gram-positive (59%) than Gram-negative (29%) strains survived disinfection. Disinfection of equipment has been performed rarely (16/112), more frequently by women (26%) than by men (7%).

Gym is a significant reservoir of pathogens. Microbiome of each gym is unique. The frequency of disinfection is insufficient. The greatest risk of infection is associated with the use of metal equipment.

**Keywords:** gym, gym-acquired infections, contamination, disinfection, microbiome, *Staphylococcus aureus*, MSSA, GBS, *Acinetobacter baumannii*, Wrocław

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# **SESSION OF PSYCHIATRY**



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## Is an e-cigarette equal with traditional cigarettes? Behavioural aspects of e-cigarette using

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Using e-cigarette differs significantly from traditional cigarettes. To fully understand influence of smoking e-cigarette on our health and addiction to nicotine, we should learn behavioural aspects of e-cigarette using.

The aim of our study was to compare behavioural aspects of smoking e-cigarettes and traditional ones.

Research was conducted in the group of 90 people (average of age:  $22,6 \pm 2,3$  years) There were divided into 3 groups: traditional smokers, e-smokers and dual users. We used our original, previously validated questionnaire, which contained questions on behavioural aspects of e-cigarette and traditional cigarette smoking. Addiction to nicotine was evaluated with Fagerströma questionnaire.

Users of e-cigarette were stronger addicted (average  $3,54 \pm 2,6$ ) to nicotine, than traditional smokers (average  $1,64 \pm 1,6$ ;  $p=0,002$ ). Dual users were more addicted to e-cigarette (average  $4,68 \pm 2,63$ ), than to traditional ones ( $3,2 \pm 2,2$ ). E-cigarette using gave more satisfaction in terms of smell (87%), taste (82,2%), breathing out (72,1%) and breathing in (55,7%). Traditional smoking gave more satisfaction during smoking with friends (63,4%), with a cup of coffee (61,7%) or after meal (45,9%).

Analysis of behavioural aspects of using both types of cigarettes shows differences in usage. E-cigarettes cause stronger addiction to nicotine than traditional cigarettes. Knowing those mechanisms is significant during working on anti-nicotine policy.

**Keywords:** behavioral, cigarette, e-cigarette, smoking

## From DSM 5 to ICD-11. Polish psychiatrists' perspective on mental disorder classifications

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The necessity of a fundamental revision of the classification adopted in 1990 seems obvious in the medical community. Psychiatrists call for changes in specific areas of the Chapter V: Mental and behavioural disorders are not at all satisfactory. The 11th edition of the International Classification of Diseases (ICD-11) is scheduled for approval in May 2018.

Our research aims to systematize the knowledge about the expectations of Polish psychiatrists regarding the upcoming changes.

The author's questionnaire was carried out during the International Medforum Psychiatry Congress 2017 in Wisla.

102 psychiatrists were surveyed. All respondents utilize the ICD classification on a daily basis, 22.5% of them also use DSM. Majority of polish psychiatrists show interest in the development of ICD 11 classification. Mood disorder and schizophrenia were considered the most useful in the diagnostic process, whereas the least useful were neurotic, stress-related and somatoform disorders. In the context of personality disorders, psychiatrists prefer the new dimensional model. Moreover, respondents support the replacement of older categories: "alcohol abuse" and "alcohol dependence" on "disorders caused by substance use". Psychiatrists are generally satisfied with the elimination of the traditional division of schizophrenia into subtypes.

Current revision of ICD is important opportunity to improve the clinical utility of the classification system for mental disorders. Our study broadens the perspective on this ongoing process suggesting general agreement with changes in DSM-V and a preference to include them to ICD-11.

**Keywords:** DSM V, ICD-10, ICD-11, classifications

## Assessment of public attitudes towards mentally ill people in Poland and Egypt

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In recent years, proceeding shift of services in mental healthcare, from large hospitals to the patient oriented community healthcare. High rates of suicides in Poland, as well as gradually rising rates in Egypt seem to point towards new challenges, connected to the increase in social distance and stigmatization of those mentally ill.

Our objective was to assess society's attitude towards mentally ill, and compare it between respondents from Poland and Egypt. According to literature, both countries require urgent actions towards policy reforms.

Study was conducted between January 2016 and September 2017 on a group of 1392 respondents originating from Poland (n=1016) and 426 from Egypt (n=376), utilizing authors' own questionnaire constructed during three-step pilot study on a group of 100 respondents. Full questionnaire contained 37 questions, among which 14, comprised an „overall attitude scale”. Cronbach's  $\alpha$  of the „overall attitude scale” equaled 0,79 in the main study and 0,83 in pilot. Outcomes range was between -5 points (very negative attitude) to 5 points (very supportive attitude).

There was no statistically significant difference between citizens of Poland and Egypt. The highest outcome was present in case of psychiatrists' group ( $x=1,5$  (95%CI: 1,3-1,7)). Overall attitude of society equaled  $x=0,73$  (95%CI: 0,67-079). 34,5% of respondents obtained their information on mental illness solely through media coverage.

Despite cultural differences, public opinion on mentally ill did not differ between Poland and Egypt, being usually neutral and indifferent to their problems.

**Keywords: stigmatization, mental illness, culture of Egypt**

## Analysis of cognitive functioning and depressive symptoms in patients with PCOS

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Polycystic ovary syndrome characterized by hyperandrogenism and ovulatory dysfunction affects 6.6–8 % of women in reproductive age. Available literature suggests presence of psychiatric problems among patients with PCOS such as depressive, anxiety symptoms and sleep disorders. Moreover, differences in neuropsychological tests in comparison with healthy women have been shown. Interestingly, neuropsychological results can be correlated with specific endocrine and metabolic factors.

The aim of the study was to analyze possible associations between cognitive deficits, depressive symptoms, hormone levels and metabolic risk factors in PCOS patients.

55 women diagnosed with PCOS were included in the study. In statistic analysis results of FSH, LH, 17-beta-estradiol, DHEAS, androstenedione, SHBG, lipid profile, glucose, insulin concentrations before and after oral-glucose administration, BMI, Waist-Hip Ratio were correlated with neuropsychological tests results including TMT A and B, Stroop Test, Verbal and Categorical Fluency Test. Depressive symptoms were measured by Beck Depression Inventory.

In the study we found that depressive score are correlated positively with OGTT 120' and triglycerides and negatively with serum HDL and SHBG. Positive correlation was found between verbal psychomotor speed, insulin level after 120 min and free testosterone. Androstendion level was associated with worse scores in executive functions assessment.

Study showed associations between depressive symptoms, cognitive functioning and endocrine and metabolic factors among patients with PCOS. Results suggest necessity of psychiatric screening of the patients.

**Keywords:** PCOS cognitive functioning depressive symptoms

## **Behavior patterns presented by patient's partner have a significant impact on severity of depressions symptoms in the patients**

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Depression is an affective disorder which involves lowering of mood. It is a feeling of sadness and gloom which lasts longer than two weeks and negatively affects well-being, work and contacts with people.

The aim of the study is to examine whether there is a statistically significant relationship between the severity of depressive symptoms in patients and the patterns of behavior of their partners.

The population in the study included patients of the Daily and Closed Psychiatry Departments of the GCM in Ochojec, as well as the outpatient clinic (30 patients aged 18 to 66 years, including 20 women and 10 men). The study involved the Beck Depression Inventory (BDI), and the KAPI scale (12 questions), used in order to assess the way of partners behavior, program Statistica 13 was used to compile data.

The amount of points received in BDI was compared with amount of points received in KAPI scale related to specific behavior patterns. The following results were obtained in Spearman's rank correlation coefficient – passive-destructive behavior pattern (0,375361), active-destructive behavior pattern (0,244097), passive-constructive behavior pattern (-0,088725), active-constructive behavior pattern (-0,497147). Received results indicate statistically significant level of correlation between the severity of depression and behavior patterns of partners.

The greater severity of the disease, the more destructive and less constructive behavior pattern occurs with the patient.

**Keywords: depression, partner, behavior patterns**

## **Towards an objective measurement of facial expressions in patients with schizophrenia: preliminary report**

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Expression and understanding of emotions plays a pivotal role in satisfactory relations between people. Impairment of these abilities have a negative impact on patients' social network, employment and consequently the quality of life. Although, descriptions of blunted affect are present in literature since the earliest studies of schizophrenia by Bleuer and Kraepelin, the subtlety and short time of single expression caused troubles to scrutinize the symptom.

The aim of the present study was to analyze mimic expressivity of the patient with schizophrenia and healthy control with utilization of marker-based method of facial motion capture.

In the study we compared facial expressions of 47 years old patient diagnosed with schizophrenia and 36 years old healthy control. Data acquisition was conducted in Human Facial Modelling Lab in Polish-Japanese Institute of Information Technology in Bytom. The method is based on reflective markers attached to predefined locations on face, which are recorded by set of infrared cameras with high accuracy. Both participant were presented the same pre-recorded videos to imitate facial expressions and in the second part of the study a comedy show to evoke spontaneous reactions.

An overall facial expressivity, understood as average distance travelled by the markers from neutral position, was diminished in patient with schizophrenia. What is more we found lowered expressivity in upper part of the face.

Marker-based method of facial expressions analysis seems to be accurate and objective approach for measurement of blunted affect.

**Keywords: schizophrenia blunted affect facial expressivity**

## Depression as a serious threat among students of medical faculties- estimating frequency, severeness and risk factors

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Depression is a common mental disorder. It affects people in different age and social status.

Our study's purpose was to check how frequent depression is among students of medical faculties. We also estimated which factors can induce or aggravate the disease.

We used anonymouns surveys containing questions based on modified Hammilton scale. We examined 454 students of different faculties.

We disqualified 9 questionaries. 81,12% of medical students suffer from depression. 47,64% have mild depression, 24,94% moderate and 8,54% severe depression. Married people are statistacally more healthy than single people. Chi-square=5,1 (important for  $\alpha=0,1$ ). Over 90% people who considered going to psychiatrist turned out to have depression. Chi-square 2,85 (important for  $\alpha=0,1$ ). Faculties that suffer from depression most often are biomedical engineering, biotechnology and pHD students. The paramedics are the most healthy group. We estimated which factors are most often connected with depression. On the first place there is "stress connected with studying". Chi-square =4,73 (important for  $\alpha=0,1$ ). Others are "rivalry among students" chi-square 3,64(important for  $\alpha=0,1$ ), "hostile teachers" chi-square 3,28 (important for  $\alpha=0,1$ ) and "lack of friendly relationships with group members" with chi-suqre 2,74 (important for  $\alpha=0,1$ ) All the students who are currently being treated from depression by psychiatrists or GPs achieved results indicating on depression in our test. It shows, that our method has sensivity level of 100%.

Depression is really common. There are certain risk factors, that can be easily modified by universities.

**Keywords: depression, students, risk factors, psychiatry**



## Correlation between selected factors and Internet addiction

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Internet addiction is characterized by excessive or poorly controlled preoccupations, urges or behaviours regarding computer use and internet access that lead to impairment or distress. Young adults are one of the most vulnerable group.

The goal of this study was analyze the way Internet is used by high school students; to identify depression symptoms and collect basic information about correspondents to find a possible correlation with the addiction.

1002 high school students from Katowice aged 18-21 underwent an anonymous survey consisting of three parts: authorial test giving basic information about the respondent, Internet Addiction Test, Beck's Depression Inventory.

1.1% of the respondents fulfilled the Internet addiction criteria. Students at risk of addiction were a larger group- 9.3%. Dysfunctional students using the Internet were more likely to present depression symptoms. Smoking, drugs and designer drugs use increased the risk of Internet addiction, while religiousness, having a hobby were reducing the risk of the addiction.

The results obtained indicate the threat of Internet addiction among high school students. There is a connection between excessive Internet usage and depression symptoms. Smoking, drugs and designer drugs use, religiousness, having a hobby were the other statistically significant factors.

**Keywords: internet addiction, depression, adolescence**

## **A Preliminary Report on Knowledge and Attitudes Toward Electroconvulsive Therapy Among Polish Students**

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Electroconvulsive therapy is one the most stigmatized and controversial forms of treatment used in psychiatry. Social reception of ECT is belived to be influenced by how it is portraied in popculture.

The aim of this study was to investigate the general knowledge and attitudes towards ECT among polish students.

1513 answers were collected via internt questionnaire, which consisted of questions about sociodemographic data and detailed ones regarding ECT, such as its indications, safety, anesthesia, preganancy etc. The answers were divided into four subgroups-economic sciences, technical, medical and health science, depending on the faculty of the respondent's studies. The data was analized using SPSS Statistics version 12.5.

Results have shown dramatically low knowledge about ECT. Approximately 1/3 of respondents claim it's dangerous, unethical and ineffective. Moreover the economic scienes students gave the most incorrect answers. There was also a statistically significant correlation between watching the four popular movies (Requiem For a Dream; Girl, Interrupted; A Beautiful Mind; One Flew Over The Cockoo's Nest) and the results.

The results indicate very poor level of konwledge regarding ECT among polish students, even the medical ones. As the stigma is influenced by popculture the counteracting steps should be taken immediatly.

**Keywords: electroconvulsive therapy, ECT, stigma**

## Social demographic profile of patients with dual diagnosis

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Comorbidity is a term referring to the presence of multiple conditions either at the same time, or in close relationship in the same individual. In case of the mental health, comorbidity between substance dependence and one or more psychiatric disorders is usually described as a dual diagnosis. This is an important matter, mainly due to the slightly different treatment requirements in this group of patients. Modified therapeutic communities, developed for a proper care and reduction in both psychological symptoms and substance abuse behaviours, require careful planning to be suitable for the patients' needs.

Our aim was to gather data on sociodemographic profile of patients with dual diagnosis, which will be useful in further development of effective treatment models.

Study included patients treated in a drug rehabilitation centre of the Upper Silesian Association "Familia" in Gliwice. The study group involved 100 patients. Average age equaled 29,7 years (min age 20, max age 48), and it consisted of 9 females and 91 males. All the patients had an established dual diagnosis.

66% of the study group was single, if it comes to the education, 29% of the respondents passed the matura exam, and 9% had a higher degree (either master or licentiate). If it comes to the family members of the participants, 63% of the respondents came from family with alcohol problems (usually father-40% of cases). Average age of introduction to drugs and alcohol was 20,4 years.

In our study, similarly to the data available in literature the majority of the patients were single males, with a primary diagnosis of schizophrenia. Average age was lower than in most studies found in literature, and equaled 29 years.

**Keywords: comorbidity, mental health, dual diagnosis, substance abuse, alcohol**

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**INTERNATIONAL MEDICAL CONGRESS OF SILESIA**

# **SESSION OF PUBLIC HEALTH AND HEALTHCARE I**

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## **Employment after lung transplantation - single center study.**

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Patients with end stage lung disease are often forced to give up work. Lung transplantation is the treatment that offers a chance to improve respiratory function and creates the opportunity to return to regular life.

The aim of the study was to assess employment among patients after lung transplantation due to end stage lung disease.

Study group consisted of 67 patients (61,2 men, 38,6% women; mean age 45 years old) of Lung Transplant Programme of Silesian Center for Heart Diseases (SCCS). After obtaining an verbal consent, patients were surveyed according to the original questionnaire.

After transplantation 18 (26,9%) of surveyed are employed. 13 men (72,2%) and 5 women (27,8%) started work after transplantation. 8 patients (11,9%) did not work at all before transplantation. 6 patients (30%) who started work after transplantation have higher education, and 11 (55%) have secondary education. 8 patients (40%) who started work after transplantation took the opportunity to retrain and adapt their skill set to a new profession. The highest percentage of rejoining the workforce after transplantation was observed among patients diagnosed with cystic fibrosis (40%). The average time people started working after LT was 16,5 months.

Percentage of patients returning to work after lung transplantation SCCS is similar in comparable to other countries. Getting a job improves patients' quality of life and it particularly concerns social contacts and psycho-physical sphere.

**Keywords: lung transplantation, end stage lung disease, return to work**

## Health-related behaviors, self-esteem, and body image in students of physical therapy

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Health-related behaviors are all behaviors or a lack of some behaviors that influence health and well-being. Health-related behaviors can be positive (health-promoting) or negative (health-destructing, self-destructing). Health-related behaviors are shaped by, for example, upbringing, work environment, and peers. Self-esteem means the way in which a person sees oneself, how she or he evaluates one's abilities, and to what extent she or he accepts oneself. Self-esteem is a subjective view of oneself, and it can be positive or negative, which can have an effect on one's behavior and well-being.

The study aimed to analyze health-related behaviors, self-esteem and body image among first and third-year students of physiotherapy.

We analyzed data of 117 1st year students (women:73.7%;men:26.3%) and of 117 3rd-year students (women:74.4%;men:25.6%) of the Medical University of Silesia. We used the Health-Related Behavior Inventory by Z. Juczynski, the Body Esteem Scale by S. Franzoi and S. Shields (1984), the Self-Esteem Scale (SES) by Rosenberg, and a survey developed specifically for the study.

Both the first-year students (74.80±12.70 points) and the third-year students (76.41±14.74 points) had average scores with regard to health-related behaviors. They differed only with respect to good nutritional habits ( $t = -2.045$ ;  $p \leq 0.05$ ). Similarly, the first- and third-year students had an average self-esteem and body image perception.

1. First- and third-year students of physiotherapy of the Medical University of Silesia had an average level of the health-related behaviors, self-esteem and body image. 2. One can suppose that the awareness of good nutritional habits is greater in students of higher years.

**Keywords:** body image, health behaviors, physiotherapy students

## The touch in the physiotherapist's profession - students' opinion from Medical University of Silesia

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The touch is an inseparable element of human life. It's allow to feel the world which around you. You can communicate with people by touch. Through touch you can build emotional relationship, because when you touch someone, your brain secretes the oxytocin. This hormone is responsible for good feeling and relaxation. The touch deserves to special attention in the physiotherapist professions, because this work cross the physical, psychical and intimate border.

The aim of the study was to recognize students' opinion about the role of touch in physiotherapy profession and analyze the correlation between this opinion and their self - assessment.

117 (74,4% women and 25,6% men) physiotherapy students from 3th year and 95 (74,4% woman and 25,3% men) physiotherapy students from 5th year took part in research. All students are from Medical University of Silesia. Method used for the research was anonymous questionnaire and Rosenberg Self - Esteem Scale.

The study shows that the respondents know how much work is done by touching, when they thought about physiotherapy course - 70% for each year. 90% respondents believe that the touch is relates with physical and psychical human area. Most of the 5th year students know that the touch can cross the intimate border – 75%. All of the students think that the patients comfort is very important during work. Future physiotherapist are open to people's comments about the feeling touch during physiotherapy help.

1. Physiotherapy students are aware that their touch during work affect to patients psyche and body. 2. High consciousness future physiotherapist about build comfort relationship with patient, can contribute high quality medical help.

**Keywords: touch, self - assessment, students' opinion**



## Termination of life in the eyes of polish university students

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As the palliative medicine is developing, we conquer the question of how long should we take action to postpone natural death. What's more, many of patients die prolonged and painful deaths, receiving unwanted, expensive, and invasive care. Regarding that euthanasia comes as an option for the patients in terminal state.

The aim of the study was to assess perception of euthanasia in the groups based on gender, type of faculty and belief of students from Polish universities.

There were 10321 participants (79,8% women and 20,2% men). They were divided into medical (11,6%) and non-medical (88,4%) brand. They filled the original survey which included questions about demographic and religion data and their attitude towards euthanasia.

The acceptance of euthanasia in the terminal state of cancer is higher in the group of women (76,2% vs 68,2% of men,  $p < 0,000$ ), non-medical students (73,5% vs.67,3% of medical,  $p < 0,000$ ), non-believers (94,1% vs.57,9% of believers,  $p < 0,000$ ). In the situation of total paralysis acceptance is also higher in the group of women (56,1% vs. 50,9% of men,  $p < 0,000$ ), non-medical students (55,8% vs.46,2% of medical,  $p < 0,000$ ), non-believers (75,3% vs. 37,7%% of believers,  $p < 0,000$ ). The same pattern is observed in the case of personal situation of terminal state of cancer and total paralysis.

The strongest impact on individual perception of euthanasia lies within religious beliefs. The groups that showed the highest acceptance rate of euthanasia are women, non-medical students and non-believers. Majority of students accept euthanasia as possible option for people at the end of life.

**Keywords:** Life termination, students' attitude, survey,

## Smoking kills – true or false?

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Smoking is one of the main risk factors of developing circulatory and pulmonary system diseases. Nicotinism is also a basis to development of such diseases as atherosclerosis, cancers, asthma, hypertension. Not only being an active smoker affects health, but also passive smoke inhalation does.

The point of the research is the evaluation of smokers number among third year medical students of Medical University of Silesia in Katowice.

The material applied in this research was dedicated and anonymous questionnaire. Answers were taken account of 300 third-year medical students from Medical University of Silesia in Katowice. All the tested students were aged 22 to 24. The following informations were evaluated: fact of active smoking, previous attempts to give up smoking, motivation to give up smoking, family risk factors, the most common situations which provoke smoking.

Among the students, about 47% consider to be an active smoker. Among them, 67% is cigarette addict and 33% is an occasional smoker. According to answers, the most common occasions to smoke are respectively: stress related with exams, meeting and parties with friends, family problems. The major part of smokers are males (about 74%). Cigarettes type preferences were different in both sexes, so were kinds of smoked substances.

In spite of acknowledgment of threat to health, especially in medical environment, still big percentage of young people remained active smokers. It seems to emphasize the necessity of making students aware of smoking negative affection on their health.

**Keywords: smoking, nicotinism, active smokers**

## **Stress problem among medical students and it's correlation with period cycle, mental health and eating behaviors.**

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Exam session is one of the most important stressful factors for medical students. Severe stress has a strong influence on sleep patterns, period cycles and weight changes which may lead to both physical and psychological disorders.

The main aim of our research was to investigate impact of exam session on period cycle, mental health and eating behaviors among medical students.

We conducted a survey among 130 medical students of the second year. The first part of survey concerned demographical data, lifestyle, health status and gynecological history and its changes during more stressful period - exam session. The second part had three psychological scales: TIPI, DASS-21 and EAT26.

The results show that 63.4 % of students (n=83) are in stress, assessed from mild (n=21; 16.0%) to even extremely severe (n=10; 7.6%). Students who have irregular sleep patterns during exam session tend to achieve higher anxiety score in DASS-21 ( $p<0.01$ ) and develop harmful eating habits ( $p<0.01$ ). Eating habits of 16 participants (12.2%) indicates concerns regarding body weight, body shape and eating. EAT26 scores were higher among women with painful periods ( $p<0.01$ ).

Our study show that stress is a widespread problem among medical students. Given that, and in perspective of future professional work, we need to find and promote ways of dealing with stress.

**Keywords: stress, eating habits, anxiety, depression, period cycle**

## **The characteristics of factors influencing medical students' choice of further specialization**

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The choice of medical specialization is one of the most important choices in the life of a young doctor. This decision depends on a number of factors. One of them is student's experience from the period of education. Aim The aim of the survey was to compare the motives of the medical students regarding the proposed choice of specialization at the beginning and at the end of their studies.

The survey was conducted in two groups of students (n=253) of the Medical University of Silesia. The subjects were divided into two groups depending on the period of education. The final group (FG, n=130) which encompassed 5th and 6th year students was compared with the starting group (SG, n=123) of students from the 1st and 2nd year. The questionnaire included questions regarding specialization plans and determinants of decisions taken including the assessment of the probability of emigration.

Students at the beginning of their studies showed greater interest in surgical specialties and scientific activity. For FG students more often than in the SG the conditions for specialization were an important factor. Students of the FG more often took into consideration their health limitations, negative attitude towards other specializations as well as suggestions and advice of other people. In the SG more students than in the FG declared their willingness to study abroad after studying.

During the educational process the medical students often modify their original plans regarding the choice of specialization. Acquired theoretical knowledge and practical skills have a significant impact on changing the motives guiding students during the selection of the planned specialization.

**Keywords:** choice of medical specialization, survey studies

## The level of knowledge about HIV among residents in Lublin

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The incidence of human immunodeficiency virus (HIV) infection remains very high in the world. It is really important to know potential risk factors and prevention methods of HIV transmission. This knowledge can be used to protect against this disease.

The aim of this study was to check the level of knowledge among residents in Lublin about HIV.

In the survey participated 41 residents of Lublin: 20 man (49%) and 21 women (51%) in age 25-52. Method used for the investigation was the questionnaire consisting of metrical part and 20 closed questions about the general knowledge about transmission of HIV.

100% of responders knew that HIV can be transmitted by sex but only 34,1% responded that HIV can be transmitted by breastfeeding. 24,4% answered that there is a HIV vaccine available. 43,9% responded incorrect in question: "Is it possible to acquire HIV by kissing?". A correlation between knowledge, sex and age has been observed. The young women showed the best knowledge about HIV transmission.

The knowledge of residents in Lublin about HIV is low. Education courses should be introduced to raise public awareness.

**Keywords:** human immunodeficiency virus, HIV, transmission

## Alcohol consumption among high-school students

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Alcohol is a major problem. Despite the fact that Poland is not at the top of the list of countries where people drink the most its consumption is over 11 litres of pure alcohol per person. Alcohol is the cause of anaemia, cancer, psychosis, pancreatitis, cirrhosis and sex abuse. Frequent drinking in vulnerable people leads to addiction. More and more people reach for alcohol at a very young age.

The aim of study is to show how many of high-school students are drinking alcohol.

The method was anonymous questionnaire. In the survey took part 71 high-school students in age 16-19.

Beer is the alcohol most frequently used by high school students. The second place is taken by vodka and the third by wine. As many as 63,4% admitted that they had used alcohol for the first time before 18 years old. Only 5 high school students have not drunk alcohol so far. The most common reasons for drinking alcohol are the desire to have fun (45,5%) and the pleasure of drinking (31,8%).

Many people use alcohol too early. They should be made aware of the consequences of drinking alcohol.

**Keywords: alcohol, drinking, high-school**

## **You are only young once - the knowledge of teenagers about puberty and menstrual cycle**

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Puberty is a crucial period between childhood and adulthood. There are great changes, both physical and psychological, going on during this time. It is very important for young people to have knowledge about their organisms at this stage of development. Their awareness can help them see worrying symptoms, if there are any. Objectives:

The aim of our study was to check basic knowledge of teenagers in terms of menstrual cycle and puberty. We also wanted to learn where does youth get all the information about this matter.

Research has been conducted between 23th of January and 12th of February 2018. The author's survey contained 46 questions, both single and multiple choice. 713 of internet users aged 11-19 took part in research, including 613 women and 100 men. The necessary statistics were conducted by means of Microsoft Excel.

More than ¾ of interviewers answered the questions that were supposed to check basic knowledge about puberty correctly. For example – 94% of respondents marked right answer in question about male reproductive cell, while only 45% correctly answered the question about detailed course of menstrual cycle. 60 % of teenagers draws their knowledge about puberty mainly from the Internet.

1. Knowledge of teenagers about basic issues of puberty is satisfactory, but more detailed aspects require more attention. 2. The most popular source of information for research participants is the Internet.

**Keywords: puberty, menstrual cycle**

## **The level of knowledge about measles among students of the high schools in Lublin**

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KatedraUczelnia

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Measles is a contagious infectious disease caused by the measles virus which is transmitted via droplets. There are typical symptoms like: cough, rhinitis and conjunctivitis along with fever and rashes.

The aim of this study was to investigate the knowledge of the high school students in Lublin about the measles.

In the survey participate 135 students: 71 girls (52,6%) and 64 boys (47,4%) from the high schools in Lublin. Method used for the investigation was the questionnaire consisting of metrical part and 20 closed questions about the general knowledge about the measles.

68.1% of people responded that the etiological factor of the measles is a virus. 45.2% did not know if they had been vaccinated against the measles, 59.3% did not know that the measles vaccine was obligatory, 54.1% answered that the measles was transmitted by droplet. 77.8% said that they would like to know more about the measles and the methods of its prevention.

In our opinion, the knowledge of the high school students about the measles is too low and the measures should be taken to educate the students about this topic.

**Keywords: measles, measles vaccination, measles prevention, high school students**



## **The attitude of students of Lublin universities to the food preservatives and their impact on the health**

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The food we eat is more and more processed, more and more advanced techniques are used to increase the shelf life or to enhance the taste of the product without raising its price.

The aim of the questionnaire was to learn about the attitude of university students from the Lublin province to food additives, preservatives, GMO and whether and how they affect their health.

The survey was conducted on a group of 237 university students volunteered, of which participated 62.4% of women and 37.6% of men. Participants of the survey were asked to assess, the factors that were important to them, including: the price of the product, its taste, expiry date and if they are treated higher by the product selection than: quantity preservatives, the length of the product composition and if the product belongs to GMOs.

73.2% of the respondents admit that in their opinion food additives have a negative impact on their health. Despite this, only 34.7% of the respondents expressed the will to buy a product without additives and preservatives if they were 50% more expensive. 68.1% of respondents identified the taste as the most important feature of the product. Only 16.5% of respondents declared that they are always familiar with the composition of the product before buying it.

Among the students, awareness of the harmfulness of food additives is significant. However, for most of them, the purchase of food deprived of them is not a priority value.

**Keywords: food additives, preservatives, GMO, impact food preservatives on the health**

## **The attitude and knowledge of the society regarding the use of antibiotics.**

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One of the more commonly used drugs in modern pharmacotherapy are antibiotics. They are used in both open and closed medicine. The key to using antibiotics is taking the medicine as indicated and as directed by doctor.

The study aimed to assess the society's attitude to antibiotic therapy and to assess the knowledge of their correct use during treatment. The study attempts to determine whether factors such as age, place of residence or education have a real impact on the conscious use of antibiotics.

In total, 168 anonymous, paper-based questionnaires were analyzed. Respondents of the survey were people living in the Silesian province using public transport, and the questionnaire was completed in the presence of the researcher.

Most of the respondents used antibiotics during the last year, although a significant number of respondents are not in favor of such therapy. Despite the prevalence of antibiotics, a large proportion of respondents have no knowledge about their correct use. As many as 77% of respondents are not informed by the doctor or pharmacist about the interaction of antibiotics with other drugs.

The study showed deficiencies in the respondents' knowledge regarding antibiotic therapy, which combined with progressive antibiotic resistance may result in their lack of effectiveness.

**Keywords: antibiotic, therapy knowledge society attitude**

## Observing health and safety rules by nurses in Poland

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One of the key elements affecting the health of both patients and medical staff is to comply with health and safety rules. Compliance with established rules reduces the risk of an accident and the occurrence of occupational disease. For such a purpose to be achieved it is necessary to provide adequate means for this.

The research was aimed at introducing issues related to compliance with health and safety rules by nursing staff. The study attempts to determine whether employers provide appropriate conditions and means for work, and whether there are other risk factors related to the observance of the rules and procedures by the employee himself.

In total, 100 anonymous, original surveys were analyzed. Respondents of the questionnaire in electronic form were nursing staff working in various branches throughout Poland.

About 60% of respondents admit that they do not fully comply with health and safety regulations. Almost half of the nursing staff are not informed that they are in contact with a person who should be especially careful (HIV, hepatitis, tuberculosis, etc.). Almost 20% of respondents witnessed an incident in which non-compliance resulted in damage to the health of a staff member or patient.

In hospitals, patient and staff safety is a priority and an important role in both the healing and convalescence process. Disturbing is the fact that some situations described by respondents do take place at all. Although the profession of nurse and nurse will always be associated with a certain risk related to the occurrence of occupational diseases, the overriding objective should be to reduce this risk to a minimum.

**Keywords: Safety, nurses, injuries, working, conditions**

## **Tobacco smoking among the fifth-year medical students.**

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The smoking rates in Poland have declined over the past decade. However, smoking remains still prevalent especially among youngsters.

The aim of this study was to evaluate the prevalence and tobacco use patterns in the medical student of fifth year.

Fifth-year medical students of Medical University in Lublin were asked to fill an online questionnaire via facebook groups. Participation in the study was voluntary and anonymous.

As a result 182 fully-filled questionnaires were gathered. The rate of response was 100%. The majority of respondents were female (nearly 60%; N=110). Despite studying medicine the rate of tobacco smokers among students is still high. 14 % of study participants were current smokers (10% females and 18% males) and 5 % define themselves as an occasional smokers. 94% of respondents were aware of tobacco smoking negative effects and more than half tried to give up smoking without positive results.

Although the vast majority of medical students is aware of smoking negative impact, the prevalence of smokers among the fifth-year medical students remained relatively high. However more than a half of smokers tried to give up smoking.

**Keywords: tobacco, smokers, medical students**

## Skin lesions among the women who suffer from polycystic ovary syndrome

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The aim of this study was to investigate the prevalence and the intensification of the skin lesions among the women who suffer from polycystic ovary syndrome.

A total of 115 Polish women (aged 19-38, mean age 25) were examined. A questionnaire, distributed via the Internet, considered: the time the PCOS was diagnosed for the first time, intake of medications, intensity of acne, hirsutism, alopecia and acanthosis nigricans. What is more, the family history of polycystic ovary syndrome was investigated. The obtained results were typed into an Excel spreadsheet and analysed statistically using Statistica 12 software. P values of  $<0,05$  were considered statistically significant.

The following symptoms occurred among the responders: hirsutism (73.9%), acne (62.6%), acanthosis nigricans (39.1%) and alopecia (21.7%). Mean severity of hirsutism is 10 in Ferriman-Gallwey Scale. The mean severity of acne is 5 (in 10 point scale). Places indicated as the most common in its occurrence are: face (87.8%), back (40%) and chest (22%). Acanthosis nigricans was found most frequently in the groins (30.7%), underarms (23.8%). Alopecia indicated by the patients is L1 (75.9%) and L2 (19%) on the Ludwig scale. PCOS was diagnosed only in 13% of mothers of our responders but the symptoms occurred with frequency: acne (13.2%), hirsutism (18.4%), alopecia (10.5%), acanthosis nigricans (9.6%).

Nowadays, 5-10% women suffer from PCOS. According to the study, more than 60% of them suffer from acne. 74% of women with PCOS developed hirsutism. Alopecia is present among 21,7% of these women and acanthosis nigricans is reported by 39 % of them.

**Keywords:** polycystic ovary syndrome, acne, hirsutism, alopecia, acanthosis nigricans

## Midwife attitudes and care for pregnant patients with Sexually Transmitted Diseases

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Nowadays, Sexually Transmitted Diseases (STDs) are a burning issue. Prophylaxis and treatment are a challenge for a public health, especially during pregnancy and labour.

We performed this study to evaluate midwifery students' knowledge and opinion (the 1st and the 2nd degree) about STDs' prophylaxis and their expertise during perinatal care.

A cross-sectional online questionnaire was designed for midwifery students. The questionnaire consisted of two parts: the first about the students' knowledge and the second about their opinion.

The questionnaire was filled out by 201 students, when 36 of them have been working as professional medical staff. Forty per cent of responders answered correctly about professional competencies during taking care of pregnant women infected by *S. agalactiae*. Seventy-two per cent of responders answered correctly about professional competencies during taking care of the HIV-positive pregnant ones. Sixty-eight per cent of responders answered correctly about professional competences during taking care of pregnant women infected by *C. albicans*. Seventy-five per cent of responders claimed that their knowledge about STDs is sufficient or low. Eighty-two per cent of responders wanted to increase the level of their knowledge about STDs.

1. Midwifery students' knowledge about STDs is relatively high. 2. According to the responders' opinion level of education on both degrees of the studies' programme is not enough. 3. Most of the responders claimed that level of their knowledge about STDs is not enough to ensure proper perinatal care for infected patients.

**Keywords:** polycystic ovary syndrome, acne, hirsutism, alopecia, acanthosis nigricans

**JOURNEY  
THROUGH  
MEDICINE**  
APRIL 25-26 th 2018



**INTERNATIONAL MEDICAL CONGRESS OF SILESIA**

# **SESSION OF PUBLIC HEALTH AND HEALTHCARE II**

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## **Students knowledge about coffee, energy drinks and dietary supplements – a questionnaire analysis**

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Coffee, energy drinks and dietary supplements have been present on the marketplace for many years.

Common usage of these products among students, especially before final exams, defines the aim of this survey study.

The study involved 394 students. The samples were differentiated for medical (A) – 250 and non-medical (B) universities - 174. In the questionnaire, we asked about the usage of coffee, energy drinks and dietary supplements before exams, mixing these products and possible harmful effects on student's health. Moreover, the necessity of medical education in this field was considered.

The results show that 65% of the A-group and 45% of B-group respondents drink coffee during studying and about 40% of each group use other products which help them be more focused. 60% of the A-group mix coffee with other products to improve concentration, but only 19% know the correct composition of energy drinks. In the case of B-group respondents, 54% mix different aids and only 7% know the right composition of energy drinks. More than half of all respondents think that medical education is fundamental for appropriate usage of these products.

Summarizing, the respondents have a fundamental knowledge on the harmful effect which energy drinks and dietary supplements may exert on people's health. The analysis points out that students don't know the right composition of energy drinks, which may be the reason for incorrect usage of these products, especially during some chronic diseases. Moreover, people should be more educated in reference to energy drinks side effects, pointing to the introduction of Pharmaceutical Care as a valuable issue.

**Keywords: energy drinks, coffee, Pharmaceutical Care**

## **Evaluation of mercury concentrations in edible mushrooms from different regions of Poland**

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Mercury released into the environment out of the anthropogenic sources accumulates in all of its elements. One of the mercury accumulation objectives are mushrooms. Edible mushroom consumption may provide additional source of mercury expose for consumers. In connection, mercury toxicity can cause perturbation of physiological processes in organisms.

The aim of the study was to evaluate mercury concentration in edible mushrooms from different regions of Poland.

The study involved 10 *Leccinum scabrum* (edible mushroom) samples from different habitats. After drying and powdering the samples mercury concentrations were determined by mercury analyzer AMA 254.

Mercury concentration in studied samples varied from 0,0261 ppm to 0,8663 ppm, with the average concentration of 0,1379 ppm.

In all studied samples of *Leccinum scabrum* mercury presence was observed. The concentration of mercury depended on the region which the mushroom originated from. Results suggest that edible mushroom species of *Leccinum scabrum* consumption may provide the potential source of mercury expose for people.

**Keywords: mercury, *Leccinum scabrum*, mercury analyzer, environment, mushrooms**

## Way of spending free time and sight defects in school-aged children

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A lot of factors influence the development of sight defects in the youngest. Besides genetic conditions, it is important to also distinguish environmental factors.

The aim of the study was to analyze the lifestyle and hygiene of visual work of school-aged children.

The study group was made of 285 people in school age (mean age 9.8 +/- 2.23). An anonymous, original questionnaire addressed to parents of primary school children was used.

The results were analysed using the chi square test, the value of  $p < 0.05$  compared to Group II ( $p = 0.048$ ). 3% of people in Group I spend in front of a computer >2h/day, the same amount of time is spent on the computer by 15% of people in group II ( $p = 0.003$ ).

Children with no vision defect stay longer under natural lighting conditions and spend less time on visual work closer to home than their peers with refractive error.

**Keywords:** sight defects, hygiene of visual work, refractive error

## Family history of breast cancer and its impact on knowledge about breast cancer

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Breast cancer is the most common malignant tumor among women. Knowledge about risk factors and its epidemiology is important for early screening and treatment.

The aim of the study was to evaluate level of knowledge about breast cancer among female medical students with positive and negative family history of breast cancer.

There was a cross-sectional, questionnaire based study. The original, previously validated questionnaire consisting 30 questions focused on knowledge of breast self-examination, breast cancer and family history was used. Population of 1226 female students of Medical University of Silesia, Faculty of Medicine (years I-V) were enrolled into the study.

The fully completed questionnaires were obtained from 760 students (response rate 62,0%), aged  $22,3 \pm 1,9$  years. Positive family history of breast cancer was declared by 20,4% of respondents, with no statistically significant difference between study years ( $p=0,8$ ) and age ( $p=0,3$ ). The most often indicated breast cancer risk factors were following: smoking cigarettes 78,1%, hormone replaced therapy 66%, early first period 62,3%. Positive family history of breast cancer had no impact on the frequency of self-examination (69,3% vs. 66,4%;  $p=0,09$ ). There were no differences in knowledge of breast cancer risk factors, symptoms and epidemiology between women with positive and negative family history of breast cancer ( $p>0,05$ ).

Positive family history has no influence on the knowledge of risk factors, symptoms, and frequency of breast-self examination.

**Keywords: breast cancer family history, young women, risk factors, knowledge of breast cancer**

## The man's role in choosing contraception

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Contraception is called the birth control or fertility control. It is the set of methods or measures which prevent pregnancy. Planning, sharing and using contraception is known as a family planning. Safe sex - including male and also female condoms, could protect sexually transmitted diseases.

Contraception has been used since antiquity but effective and safe methods appeared in the 20th century. In some cultures the access to contraception is deliberately limited because it is considered morally and politically undesirable. Hormonal contraception is designed to stop ovulation and fertilization.

There are a lot of available measures, for example : birth control pills, implants which are placed under the skin, injections, slices, IUDs, vaginal rings. Nowadays they are available only for women. Contraception is a topic, that the couples deal with at some stage of the relationship or also other people who are going to start sexual intercourse.

The aim of the work was to check the man's role in choosing contraception. Researches have been carried out with the help of an original questionnaire addressed only to men. Questionnaire has been shared on the social network and also filled out in a traditional form.

**Keywords: contraception, fertility, man**

## **Knowledge concerning diabetes among students of the final year of medicine in Poland**

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Given the epidemics of diabetes we designed a study to evaluate knowledge concerning diabetes among students of the final year of medicine.

473 students from Medical Schools in Katowice(36%) and Zabrze(35%), Medical University of Warsaw(13%) and Lodz(16%) answered anonymously a 25-question survey. Questions concerned basic knowledge on DM covered by the curriculum.

96% attended diabetology classes, but only 6% plan to specialize in diabetology. 31% described themselves as poorly or not prepared to take care of patients with DM. Surprisingly 3% of students did not know that diabetes type 1 is incurable and 16% that T1DM patients require insulin even when fasting.

72% of students had basic knowledge concerning monogenic DM (best knowledge 98%, pe concerning diabetes even among medical students - soon-to-be doctors.

**Keywords: children, diabetes**

## **Awareness of non-medical university students about sexually transmitted infections and methods of their prevention**

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Sexually transmitted diseases are a common problem of people who are sexually active. University students also belong to the group of people taking risky sexual contacts.

The aim of the study was to check the level of knowledge and prophylaxis against sexually transmitted infections among the students whose curriculum does not include these issues.

The study was based on a group of 114 people, including 52 men and 62 women participating in a voluntary survey consisting of closed questions. It was attended by students of universities from the Lublin province. The questionnaire included questions about general knowledge about STD, their treatment, prevention methods and complications.

The level of knowledge about sexually transmitted infections as "sufficient" was assessed by 39.5% of respondents, while only 20% of respondents rate it as "good". 65% of respondents do not classify Hepatitis B for sexually transmitted diseases. For 78% of respondents, a condom is considered a certain protection against infections. 18.4% of respondents admit that they have had sexual intercourse with a casual partner without any measures to prevent infection at least once in their lives. For almost half of the respondents, oral sexual contacts are considered to be free of the risk of sexually transmitted infections.

The awareness of non-medical university students about sexually transmitted diseases is too low and measures should be taken to increase it.

**Keywords: sexually transmitted diseases, STD prevention, students**

## **Sustained release preparations and factors affecting the action of drugs – is pharmaceutical care necessary?**

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Sustained release (SR) preparations are an increasingly common form of medicines available in pharmacies and used by people. Inappropriate usage of drugs may cause many dangerous consequences for the health of patients.

Thus verification of patient's awareness about factors affecting the action of drugs and SR preparations is needed.

The data was collected with anonymous online survey filled via the Internet, but also by an elderly people in health facilities. The survey questionnaire was filled out by 470 people, 370 women and 100 men. 38,5% of them were at the age of 18-30, 13,5 % aged 31-45 years old, 15% at 46-60 and 33% older than 60.

The first part of survey shows that 88% of patients don't take medication with the right amount of water and 20% of people think that taking tablets with water don't affect on action of drugs. Many people don't care that some fluids e.g. grapefruit juice or milk can interact with drugs and change their action. Furthermore, 87% of the respondents declared that understand the concept of SR preparations. Unfortunately 44% of them think that these drugs have greater power of action than ordinary drugs. Additionally 33% of people pointed out that SR preparations can be divided during of treatment. The obtained results have shown that some of respondents have basic information about SR drugs and factors affecting the action of drugs, however this knowledge is not enough to using SR preparations safely.

Additionally, many people can't indicate interactions between drugs and fluids or food. All these conclusions have proven, that Pharmaceutical Care is significant, and must be expanded among the largest number of patients.

**Keywords: sustained release drugs, food- drug interactions, Pharmaceutical Care.**



## **The role of *Ixodes ricinus* males in transmission of *Borrelia burgdorferi sensu lato*, *Anaplasma phagocytophilum* and *Rickettsia helvetica* on the selected areas of Silesia Province**

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Ticks (Acari: Ixodida) are vectors and/or reservoirs of different pathogens, including *Borrelia burgdorferi sensu lato*, *Anaplasma phagocytophilum* and *Rickettsia* spp.

The evaluation of the occurrence of *B. burgdorferi* s.l., *A. phagocytophilum* and *Rickettsia helvetica* in *Ixodes ricinus* males on the selected areas of Silesia Province.

The DNA was isolated from 60 tick males by the ammonia method. The pathogens in ticks were detected by PCR method. To detect of *B. burgdorferi* s.l. the pair of primers specific to the flagelline gene was used. Whereas, to detect of *A. phagocytophilum* and *Rickettsia* spp. were used the primers specific to the 16S rRNA gene and *gltA* gene, respectively. The amplification products were separated in 2% ethidium bromide stained agarose gels and then visualized in ultra violet light. The presence of PCR products of size: 482 base pairs [bp] for *B. burgdorferi* s.l., 274 bp for *A. phagocytophilum* and 381 bp for *Rickettsia* spp. were considered as positive.

In total, *R. helvetica* in 5/60 (8.3%) of studied males was found. This pathogen was mainly shown in ticks came from the area of Jeleniak and Tychy (16,6% and 10% of studied ticks on this areas, respectively). On the other studied areas *R. helvetica* in lower percentage of ticks was found. The presence of *B. burgdorferi* s.l. and *A. phagocytophilum* was not stated in the material examined.

The obtained results confirmed that *I. ricinus* males may be vectors and/or reservoirs of *R. helvetica* on the studied areas. Moreover this developmental stage may also play an important role in sustaining of this pathogen in the environment.

**Keywords:** *Borrelia burgdorferi sensu lato*, *Anaplasma phagocytophilum*, *Rickettsia* spp., ticks, *Ixodes ricinus*, pathogens.

## Chromium concentration in dietary supplements

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Chromium is an essential element for human body. It is required for the proper metabolism of glucose. Diet supplements with Cr are willingly taken due to the fact that chromium is popular weight loss substance.

The aim of work was to evaluate the concentration of chromium in selected dietary supplement. Determination of the daily administered dosage.

Dietary supplements purchased from the local pharmacies were analyzed. Portion of pulverized tablet/capsule was prepared and mineralized by microwaves. The concentration of chromium in the samples were assayed with the flame AAS method.

Assayed concentration of chromium was converted into the content in a single tablet. The content of Cr for majority dietary supplements were in safety range (50-200 µg).

The diet is the main source of chromium, but any daily requirement is still not fully defined.

**Keywords: chromium, dietary supplement, AAS**

## Primary prevention of cardiovascular disease in young adults

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The main cause of morbidity and precocious death are cardiovascular diseases. Potentially modified risk factors, environmental exposure and genetic factors may predispose to the occurrence of a specific cardiovascular disease entity. Atherosclerotic processes and obesity are some of the factors developing at a young age and progressing as gets older, increasing the risk of getting the incidence in the future.

Analysis of factors that increase the risk of cardiovascular disease among young adults and their knowledge about primary prevention.

We analyzed 906 young adults, including 613 (67.66%) women and 296 (32.34%) men at the age of  $19.47 \pm 2.59$  years. The study was conducted using a questionnaire.

Abnormal body weight (BMI  $\geq 25$  kg/m<sup>2</sup>) was present in 12.26% of person, significantly more frequently observed in men than women (18.47% vs. 7.70%,  $p < 0.05$ ). Obesity (BMI  $\geq 30$  kg / m<sup>2</sup>) was significantly more frequently observed in persons with a family history (2.88% vs. 0.48%,  $p = 0.0066$ ) and smokers (5.65% vs. 1,28%,  $p = 0.0009$ ). Significantly, the presence of heart disease in the study group was shown by persons with a family history (8.44% vs. 3.81%,  $p = 0.0033$ ). The knowledge of young adults about cardiovascular risk factors was on the level 84.86%.

An anti-healing attitude in young adults may have clear consequences at adulthood. Patterns of health behaviors among young people who are transmitted by people from their environment are associated with the risk of developing cardiovascular diseases. Young adults are significantly exposed to the onset of cardiovascular disease at a later age. The analysis of the significance of healthy behaviour in cardiovascular risk prevention could allow to minimize the incidence in the future in adulthood.

**Keywords:** cardiovascular diseases, young adults, obesity, primary prevention

## Old age in the eyes of young adults

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Each stage of a human life presents new challenges and physical changes of one's organism, it's not different with old age. Reactions of elders to these changes have significant influence on the image of old age for those, who have not entered that stage of life.

The main goal of my work is to examine and elaborate the way young people think about aging. The issue is even more important due to the fact that Poles are an aging people. The imaginations that young people have are not all the same and gender creates a difference in the answers of those surveyed. Taking up this topic required forethought on the key problems, which concern the elderly.

An anonymous survey was held among people in the 18-25 age group. It's worth taking up this issue as it allows one to see the opinion on old age from different perspectives.

Young adults are full of different, often conflicting, emotions about old age - some have fears regarding the topic and some treat it as nature taking its course.

Worrisome is the fact, that almost half of the surveyed see old age as a negative state. That leaves one question - why is it so and what caused them to see it that way?

**Keywords: old age, young people, changes, problems, body, mind, diseases, fears**

## **The interdependence between the clause of conscience and abortion according to medical staff**

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Due to a wide range of available services, the nurse/ midwife has the right to refuse to perform medical activities, which are against with her believes. The right of the patient to terminate her pregnancy is contradictory to the right to the clause of conscience. It is important, however, to provide the patient with the care and the opportunity to perform a reasonable treatment.

The aim of the thesis is to study the perception of abortion through the prism of conscience clause in relation to medical staff.

940 respondents participated in the study, 97.4% are women and 2.6% are men. The average age of the respondents is  $35.15 \pm 10.40$ . A self-prepared questionnaire was used, consisting of 14 multiple choice questions about as age, gender, religion, seniority, occupation and place of residence. The questions concerned the use of the conscience clause and participation in the abortion procedure.

A statistically significant relationship was found between the profession and the attitude towards abortion. Midwives, compared to nurses and doctors, are against abortion ( $\chi^2 = 18,413, p \leq 0.01$ ) and more often use the clause of conscience concerning abortion ( $\chi^2 = 10,388, p \leq 0.01$ ). Nurses are more frequently than midwives not aware of the statutory possibilities of using the conscience clause ( $\chi^2 = 14,166, p < 0.001$ ). Believers less likely than atheists participated in the abortion procedure ( $\chi^2 = 32.805, p < 0.001$ ).

The profession has got a significant impact on the use of the conscience clause. The knowledge about possibility of use the conscience clause by medical staff should be broadened.

**Keywords: clause of conscience, abortion, medical staff**

## **Compliance with medical recommendations and the credibility of doctors in the population of Lublin**

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In the age of the Internet the problem of compliance with medical recommendations seems to increase. The articles available on the websites can often lead to a change in the way of treatment without the doctor's supervision.

The aim of the study was to see the level of compliance with medical recommendations among high school students in Lublin.

In the survey took part 92 people, including 53 women and 39 men. Method used for the research was the questionnaire consisting of metrical part and 21 closed questions about their compliance with medical prescriptions, checking the information about the diseases and medicines in the internet, trust in relation of doctors, discontinuation of treatment without doctor's notice.

46.2% of the respondents admitted that they had stopped taking the medicine at the moment of improve. 13.1% of people were taking a prescription drug without contacting a doctor. 73.1% of the respondents said they verify knowledge from a doctor with knowledge from the Internet. 52.4% of the surveyed admitted that they would be willing to change their doctor if his opinions contradict the information found on the Internet.

Along with widespread access to the Internet, patients' trust in doctors is decreasing. Young people should be made aware that just as everyone can use the internet, anyone can be diagnosed there without sufficient knowledge.

**Keywords: medical recommendations, doctor's authority, compliance with medical prescriptions, medical knowledge from the Internet**

## Sleep disorders among young doctors in Poland

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Being a young doctor in Poland is considered as a demanding job associated with lack of sleep, insufficient salary and large amount of stress. Recently we were witnesses of a nationwide strike among young medics in order to change current situation and we are curious if working as a medical professional is related with sleep disorders.

The aim of the study was to assess how severe are the sleep disorders in young doctors.

An anonymous questionnaire survey for young doctors was used for assessment: it consist of section for baseline characteristics, Epworth Sleepiness Scale (ESS) and questionnaire of Sleep Quality (JS), and our cut-off points were respectively >11 and >30 points. The study was conducted on 100 young medics, who were at age 26-35, and worked as a doctor for average 3,5 years. Among them, 41% were male and majority – 87% are in not-surgical specializations.

Our results show us that 46% of investigated suffer from sleep disorder but no one had severe condition. According to age, there are more medics younger than 30 years who passed cut-off points than older doctors, in ESS:20% vs 19,5% and JS: 55,9% vs 31,7%. There was more female doctors who scored above endpoints, in ESS: 22% and JS: 57,6% whereas among male workers there were respectively 17% and 29,3%. First of all, young doctors are not willing to join the study, we only received 106 from 220 questionnaires. Secondly, depending on results female workers and doctors younger than 30 years are in greater risk of sleep disorders.

Neither young medic had condition requiring consultation, however average working time as a doctor is only 3,5 years and yet nearly half of our group has sleep disorders.

**Keywords:** healthcare, sleep disorders, young doctors, Epworth Sleepiness Scale, ESS,

## The influence of various factors on seniors` attitude towards the vaccination

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Vaccination is a scientific phenomenon which has revolutionized the world. The more negative opinion about vaccinations can be observed which may be a result of general knowledge about them as well as the ways of finding out the necessary information and the assessment of its reliability. The observed decrease in vaccinations is the effect of propaganda of the antivaccine movement.

That is why the research has been made with 42 people from Polish Teachers Association being questioned – Pensioners Club aged 50-70, with secondary (28%) and higher education, where women constitute 95%.

An anonymous survey was used consisting of the metric with six questions concerning the respondents as well as 15 questions of single choice. The general knowledge about vaccinations was checked and the attitude toward them.

The respondents have an influence on decisions concerning the vaccination of their own children, 97% of them had offspring. All respondents vaccinated their children in accordance with the vaccination programme and indicated the PG doctors as the most reliable source of knowledge about them. 81% of the respondents got positive opinions about vaccinations from POZ institutions, and negative opinions were mainly obtained from doctors and friends. 57% of the respondents answered the question concerning the smallpox eradication correctly and 80% assessed the vaccinations may be the cause of autism. It may be stated that the respondents were not under the influence of the antivaccine movement.

Seniors use traditional credible sources of information. Seniors` knowledge about vaccination reflects the high rate of seasonal vaccinations against the flu.

**Keywords: vaccination, antivaccine movement, seniors**



## **Knowledge and attitudes towards vaccination among medical and non-medical students**

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Depreciation of immunization through anti-vaccination movements has recently become noticeable. This phenomenon causes a serious public health risk and it is needed to determine its origin.

The aim was to study the attitude of students of the University of Rzeszow towards vaccinations, which may influence their choices as future parents.

The study covered 2548 students who filled an anonymous questionnaire with 6 demographical and 15 single-choice questions. It checked attitudes and knowledge about vaccination.

The response rate has reached 85.75%. 41.71% of the respondents were medical, and 58.29% non-medical students. The doctor was considered the most reputable source of information on vaccination. 76.08% of medical students and 52.92% of other people have opted for vaccination, although 85% are not vaccinated against influenza in both groups. Negative opinions on vaccination in 49.43% has come from the Internet, but as much as 11.68% from doctors. In this group the most common argument pro vaccines were the willingness to immunize against life-threatening diseases. The question assessing the knowledge about vaccines, concerning true smallpox elimination, was answered correctly by 42% of medical and 20.5% of non-medical students. 80.77% of medical and 56.17% of non-medical students did not associate autism with immunization.

There are differences in the opinions of both groups, which may result from the level of education in the field of vaccination. Misconceptions about vaccines lead to wrong attitudes. It is important to improve the quality of information about vaccination by the form of different campaigns, in order to provide credible sources to the unaware.

**Keywords: vaccinations, students, attitudes**

## What does the society really think about vaccinations?

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Vaccines are used to avoid infectious diseases which pose risk of severe manifestations, life-threatening complications or even death. Due to the range of anti-vaccine movements number of people who don't vaccinate their children is increasing.

Finding out what is the level of knowledge about vaccinations and credibility of antivaccine movements in polish society. Investigating the origin of false information influencing society opinions on vaccines.

Survey was carried out on a group of 2225 respondents-men and women above 18 years of age. The research tool was a questionnaire in paper and electronic versions. Participation was voluntary and anonymous.

Almost 68% of respondents were in favor of vaccinations, but 85% weren't vaccinated against influenza. 49% considered the Internet to be the main source of negative information on vaccination. 15% stated that the source of this information was a doctor. 55% wanted to immunize themselves/children against life-threatening diseases, but only 17% against all possible illnesses. 44% of respondents correctly identified smallpox as an eradicated disease and 74% disagreed with the statement „Vaccines cause autism”. There was an unawareness about vaccination complications- still 32% thought that vaccinations cause allergies, autism and other serious diseases. Results are under development.

A survey has shown that society's level of knowledge about vaccinations is unsatisfactory. "Social media" and surprisingly health workers seemed to be the main sources of misinformation concerning vaccinations.

**Keywords: immunization, anti-vaccine movements, parents, informations**

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# **SESSION OF RADIOLOGY, RADIODIAGNOSTICS AND NUCLEAR MEDICINE**

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## **Anatomical variations of dural sinous system in Magnetic Resonance Angiography**

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Dural venous sinuses are anatomical structures that differ between individuals and also between the two brain hemispheres of the individual. Differences include location, width, course and development. Magnetic Resonance Angiography is a group of techniques based on magnetic resonance imaging (MRI) to image blood vessels.

Retrospective analysis of dural venous sinuses: superior sagittal sinus, transverse, sigmoid sinuses and diameter of jugular bulb in angio-MR examination of arteries and veins, performed without contrast agent.

Retrospective analysis was made on 79 angio-MR examinations performed in 2008-2018 in MR laboratory Voxel SPSK1 in Zabrze. Most common indications were headache and suspicion of vessel malformations. Study group included 58♀ and 17♂ in age 18 - 78 and 4 children in age 11- 17. We analyzed blood flow signal through superior sagittal sinus, transverse and sigmoid sinuses.

Anatomical variations of dural venous sinuses appeared in 70 (88,6%) patients, mostly affecting left transverse sinus (38 patients), left sigmoid sinus (35 patients) and superior sagittal sinus (22 patients).

MRA images analysis confirmed high variety of cerebral venous sinus morphology, reported in the literature, which should be taken into consideration in clinical practice while MRA imaging, often obtained for other indications than CNS vessels pathology. It needs to be emphasized that no explicit conclusion about actual vessel diameter could be drawn based on one-off MRA scan, since this method analyses the blood flow, not the vessel itself.

**Keywords: dural venous system, anatomical variations, MRA**

## **The impact of radioiodine therapy in patients with non-toxic nodular goitre with low RAIU with a single dose of recombinant human thyroid-stimulating hormone (rhTSH).**

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Non-toxic goitre is an enlargement of the thyroid and is not associated with abnormal thyroid function. Some patients may have low RAIU what makes radioiodine therapy non-effective.

The aim of our study was to assess the influence of recombinant human thyroid-stimulating hormone on the efficacy of radioiodine therapy in patients with non-toxic nodular goitre with low RAIU.

The study included 50 patients with non-toxic nodular goitre (36 females, 14 males, aged 34–75 years). All patients had low RAIU (8–16%), 24h after a diagnostic dose of I-131 (4 MBq). All the patients received a single intramuscular dose of 0.05 mg rhTSH (thyrogen). 24h later diagnostic dose of I-131 was administered and thyroid scan with RAIU after 24 and 48 h was estimated.

Therapeutic dose of I-131 was given on the third day of rhTSH administration. Serum levels of TSH, fT4 and fT3 were determined 24 and 72h after rhTSH administration and on the 3rd day after radioiodine therapy. The therapeutic activity of I-131 was calculated by Marinelli's formula and ranged between 280-600 MBq. The absorbed dose ranged between 150-220 Gy. Follow up control was done every 6 weeks. Thyroid USG and thyroid scan were done again after 6 and 12 months of radioiodine therapy. A significant increase in 24 h RAIU was observed after rhTSH administration. The distribution of radioiodine was more homogeneous 48 h after rhTSH administration. After 12 months 92% of patients were in euthyroid state and 8% developed hypothyroidism. After 6 months the mean reduction in goitre volume was 22 and 45–55% after 12 months.

The medium therapeutic activity of I-131 was 280 MBq. rhTSH makes radioiodine therapy more effective in the patients with low RAIU

**Keywords: non-toxic goitre, radioiodine therapy, RAIU, recombinant human thyroid-stimulating hormone, rhTSH**

## **The result of radioiodine therapy in 1200 patients with subclinical hyperthyroidism**

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Subclinical hyperthyroidism is a state of increased thyroid function with few or no clinical specific symptoms of hyperthyroidism, characterised by a decrease of TSH, when serum levels of total and free thyroxin and T3 concentration are within reference ranges.

The aim of our study was to assess the influence of radioiodine (<sup>131</sup>I) therapy on the achievement of euthyroidism, prevention of adverse effects on the cardiovascular and prevent evolvement to overt hyperthyroidism.

We treated 1200 patients, aged 30-70 years; 87% female, 13% male; 380 patients with multinodular goitre (MNG) and 820 patients with autonomous nodule (ATN), 110 patients were treated with antithyroid drugs for 1-3 months before <sup>131</sup>I therapy. Malignant changes were excluded in all nodules by fine needle aspiration biopsy. All the patients had serum TSH levels <0.1 mU/l and effective T-half was more than 3 days at the time of treatment. The activity dose was calculated by the use of Marinelli's formula and ranged between 200-600 MBq. The absorbed dose (Gy) ranged between 180-300, and was proportional to thyroid volume. Follow up control was done every 6 weeks.

Euthyroidism achieved in 99% of patients with ATN and 94% of MNG; 1% of patients with ATN and 6% of patients with MNG develop hypothyroidism. In all of the patients, the symptoms of subclinical hyperthyroidism disappeared. 1% of the patients received 2nd dose of radioiodine.

Our result is good and is in the range of the existing literature. The achievement of euthyroidism and the remission of the symptoms of subclinical hyperthyroidism, were due to good diagnosis; accurate measurement of administered activity, effective half-life and well-organized follow up.

**Keywords:** radioiodine, subclinical hyperthyroidism, euthyroidism, hypothyroidis,

## Application of Narrow Band Imaging (NBI) in laryngology

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Narrow Band Imaging is an endoscopic examination, that differs blood vessels and other tissues according to their ability of absorption of green and blue light. Thereby it is visualized a specific vascular pattern. According to Ni classification there are 5 types of vascular patterns (type V consist of 3 subtypes). Type I-IV characterize benign lesions and type V malignant tumors. In leukoplakias vascular pattern is invisible within the lesion, because of keratinization, but it is possible to assess patterns in direct surrounding of leukoplakia.

Investigation of relevance of NBI in stratifying the risk of malignant transformation within leukoplakia by the evaluation of vascular patterns in the surrounding tissues.

There was performed analysis on 62 patients with 91 changes of leukoplakia on vocal folds. NBI was obtained prior to the microsurgery. The categorization of the lesion as benign leukoplakia was made when vessels of the surrounding epithelium were classified as type I, II or IV and malignant when type V according to the Ni classification. The results were compared to histopathological diagnosis.

NBI revealed 75 (82,41%) benign and 16 (17,59%) malignant lesions. Histopathologists diagnosed 77 (84,62%) benign and 14 (15,38%) malignant lesions. Sensitivity and specificity of NBI as diagnostic method were 100% and 97,4%. Cohen's Kappa coefficient, which assess agreement of NBI and histopathological results, was 0,92.

The high accuracy of NBI examination in predicting the risk of malignant transformation within leukoplakia provides clinicians with sufficient instrument for treatment decisions.

**Keywords: Narrow Band Imaging, leukoplakia, vocal fold lesions, vascular pattern**



## **A diagnostic challenge - comparative analysis of radiological results and histopathology reports in cystic neoplasms of the pancreas**

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Cystic neoplasms of the pancreas are relatively frequent in radiological images. Correct diagnosis is essential for further therapeutic procedures – mucinous tumors are potentially malignant and should be treated surgically.

The aim of the study was to assess compatibility between presurgery CT diagnosis and histopathology reports of the pancreatic cystic neoplasms.

Our study included 32 patients (24 women, 8 men) with average age 61,8 years. All patients underwent therapeutic pancreas to duodenectomy or distal pancreatectomy in 2015-2016. The radiological assessment was based on the presurgery CT scans which were interpreted at the Department of Radiology and Nuclear Medicine of the Medical University of Silesia. The diagnoses were affirmed by the postsurgical pathology reports.

From among 32 cystic neoplasms, 19 (59,4%) had a diameter higher than 2cm and 12 (37,5%) were located in a head of the pancreas. According to pathology reports there were 21 intraductal papillary mucinous neoplasms (IPMN), 6 serous cystic neoplasms (SCN) and 5 mucinous cystic neoplasms (MCN). CT scans interpretations showed 5 of 21 IPMN (23,8%), 3 of 6 SCN (50%) and 1 of 5 MCN (20%), there were also 3 SPN (solid pseudopapillary neoplasms) which weren't confirmed in pathology reports. Radiologists wrote about 6 „tumors” and 6 „lesions” which turned out to be pancreatic ductal adenocarcinomas derived from IPMN. From among 32 neoplasms, 17 occurred to be malignant (53%).

Cystic neoplasms of the pancreas are a significant diagnostic problem. Only a small part is interpreted correctly in CT. Early diagnosis and immediate resection of these lesions is important due to their common malignant progression

**Keywords: pancreatic cystic neoplasms, IPMN, SCN, MCN**

## **Radiological findings in magnetic resonance of the brain in neonates treated with therapeutic hypothermia.**

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The purpose of this study was to quantitatively analyze the spectrum of cerebral changes detected in head MRI (Magnetic Resonance Imaging) in neonates who underwent therapeutic hypothermia.

47 head MR scans of term neonates that underwent therapeutic hypothermia due to perinatal sentinel events resulting in hypoxia. The scans were performed on a 1.5T GE HDx magnetic resonance platform in the Independent Public Hospital no.1 in Zabrze between 2008 and 2017.

The group consisted of 24 female and 23 male infants. The average age at the moment of examination was 12.7 days (SD 3.76). The database was created using MS Excel. Data handling was performed using StatSoft Statistica. Results In the investigated group of patients, radiological features of hypoxic-ischemic encephalopathy were found in 18 (38,3%) of the cases. Signs of delayed myelination were present in 14 (29,8%) neonates, hemorrhagic changes in in 13(27,7%) of the infants. In 9 cases(19,2%), more than one type of central nervous system anomalies were present. 8 neonates(17%) presented no anomalies in the radiological image.

The study demonstrates that perinatal sentinel events may result in various changes in the neonate's brain, not only limited to hypoxic-ischemic encephalopathy. Delayed myelination and hemorrhagic changes are the second most common radiological finding in neonates who underwent therapeutic hypothermia. Since in some cases more than one type of anomaly is present, additional scanning sequences should be considered

**Keywords: MRI, brain, neonate**

## **Pulmonary embolism in computed tomography angiography (CTA) - what could hide behind?**

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Although symptoms of pulmonary embolism (PE) may be indicative, the result of the examination often excludes this diagnosis. However, there are many situations when some other significant features are imaged accidentally.

The aim of the study was to evaluate the most common incidental findings discovered in CTA performed due to PE clinical suspicion.

There were 201 cases (males 52%; mean age  $66\pm 16$  years) of pulmonary CTA performed due to suspected PE in archives of the University Hospital in Cracow between June and October 2017. CT scan range: from lung apices to adrenal glands. All cases were analysed in term of described lesions.

Pulmonary embolism was confirmed in 15% of cases. These patients were significantly younger than these without PE ( $p=0.02$ ). The most common additional findings among these patients were spinal osteoarthritis (43%), lung tumour (20%), calcified atherosclerotic plaques (17%) and liver steatosis (13%). Liver steatosis ( $p=0.04$ ,  $OR=3.60$ ) and lung tumour ( $p=0.03$ ,  $OR=3.04$ ) coexisted significantly more often with PE. Abnormalities within lungs and pleura were detected in 72% of patients without signs of PE: 35% pneumonia, 30% pleural effusion, 21% atelectasis. In 10% of patients neither embolism nor pulmonary lesions were found. In this group, the most common findings were spinal osteoarthritis (65%) and calcified plaques in coronary arteries (20%).

Older patients are more prone to diseases which mimic symptoms of the pulmonary embolism, namely: pneumonia, pleural effusion, nerve compression due to spinal osteoarthritis. Pulmonary embolism is likely to coexist with lung tumour and liver steatosis.

**Keywords:** Pulmonary embolism, computed tomography angiography, incidental findings

## Perfusion Magnetic Resonance Imaging parameters in low-grade and high-grade gliomas

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Work's tutor: opiekun

Magnetic resonance imaging (MRI) is one of the most important methods in the preoperative evaluation of brain tumors. Perfusion MRI is a specialized scan and parameters generalized by this technique add useful information about some physiologic characteristics of the tumor and may help to predict the grade of glioma.

The purpose of the study was to determine the usefulness of relative cerebral blood volume (rCBV) and mean transit time (MTT) in differentiating low-grade from high-grade glioma.

This was a retrospective study, which involved 27 patients with histologically proven glial brain tumor (15 low-grade and 12 high-grade gliomas). Every patient was examined with perfusion MRI before surgery was performed. The rCBV was calculated as the ratio of CBV from the tumor to CBV from contralateral normal-appearing white matter. For statistical analysis Mann-Whitney test and receiver operating characteristic (ROC) curve analysis were performed.

Mean rCBV and MTT were  $1.64 \pm 0.54$  and  $27.94 \pm 3.59$  seconds for low-grade and  $3.32 \pm 1.58$  and  $30.84 \pm 4.01$  seconds for high-grade gliomas. Mean rCBV and MTT between these two groups of gliomas were significantly different ( $p < 0.01$  for rCBV and  $p < 0.05$  for MTT). The rCBV cutoff value was 1.56, and the sensitivity and specificity of this value were 75% and 60%. The MTT cutoff value was 27.68 seconds and the sensitivity and specificity of this value were 83.3% and 67%.

rCBV and MTT are useful in differentiating low-grade from high-grade glioma, however MTT appeared to be a better parameter for assessing glioma's grade due to higher sensitivity and specificity.

**Keywords:** Magnetic resonance perfusion imaging, glial brain tumors, relative cerebral blood volume, mean transit time

## **Complications after radiotherapy from upper and lower urinary tract**

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Malignant neoplasms of the urinary system account for about 11% of cases in males and 5% in females. The incidence of malignant tumors of the urinary tract is most often observed after the age of 50. Most deaths from malignant urinary tract tumors occur also after the age of 50.

Analysis of complications from the upper and lower urinary tract after application of radiation therapy depending on the type and severity of cancer and the dose and type of radiation.

Retrospective analysis of the history of 118 patients (68 men and 50 women) hospitalized from January 2000 to February 2017 in Urology Clinic in Zabrze. Patients were divided into two groups. The first group were people who had engraved complications from the upper urinary tract and the second group with complications from the lower urinary tract.

Group 1 was ultimately 61 people among whom the indication for radiotherapy was mainly: cervical cancer and prostate cancer. In this group, the complication after radiotherapy was unilateral narrowing of the ureter, bilateral ureteral stenosis and complications from the kidneys. Group 2 was assigned 57 patients, in whom the indication for radiotherapy was mainly prostate, bladder and cervical cancer. Complications after radiotherapy in this group include urethral stricture, radiation bladder and fistulas.

The use of radiotherapy for pelvic neoplasms is associated with a risk of complications from the urinary tract. Complications from the upper urinary tract were more frequently observed. The most common complication: Group I had hydronephrosis, in Group II - urethral stricture.

**Keywords: radiotherapy, urinary tract**

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# **SESSION OF SEXOLOGY**

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## **Patient vs physician - common issues faced by transgender patients when accessing healthcare**

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Transgender individuals are a unique group of patients - physicians, nurses and other medical professionals often lack knowledge and skills necessary to provide transgender patients comfort during accessing healthcare.

To determine transgender patients' opinion on accessing healthcare and its quality, especially in direct contact with a physician.

The study was conducted in October and November 2017 with the use of an original questionnaire addressed to transgender patients. Collected data was analysed using Microsoft Excel.

320 polls were gathered in the course of the study. All participants accessed healthcare in the 12 months preceding the study at least once. The majority of participants finds the perspective of coming out as transgender to a physician stressful. 46,9% participants admits to hiding their gender identity when accessing healthcare and 43,8% gave up on a medical check-up due to bad past experiences, mostly accidental or deliberate misgendering by medical professionals. Participants often feel that they have to educate their physicians when it comes to transgender issues, health and stereotypes.

Due to insufficient education transgender patients are often - even if accidentally - misunderstood. Improving the comfort of transgender patients should become the focus of healthcare professionals. Individual and open approach to the patient could possibly help to prevent avoiding accessing healthcare.

**Keywords: transgender healthcare**



## **Student's knowledge from Medical University of Silesia and others Universities from Katowice about structure and functions of female genital organs**

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Sexuality is one of the most famous and primary instinct of every human. It creates in first three years of human's life. According to standard's of BZgA from 2010 children at the age of 9-12 should be taught about structure and functions of internal and external genital organs, menstruation, ejaculation and first sexual experience. Do really young adults had an opportunity to receive the basic knowledge about sexuality?

The aim of our research was grading the actual knowledge of men and women - students of Medical University of Silesia in Katowice and other silesian universities about structure and functions of women's reproductive systems.

We conducted our research using an online survey in which participated 360 people aged 19-26, including 288 women and 72 men. Amongst the surveyed, there were 168 students of Medical University of Silesia, and 192 students of other universities. The survey included open and closed questions.

The average percentage of correct answers amounted to 57% - including the average score amongst students of Medical University of Silesia amounting 61,64% and amongst students of other universities amounting 53,55%.

The research validated that students of Medical University of Silesia have bigger knowledge about structure and functions of women's system, comparing to students of other universities. Nonetheless, the difference in scores is not as big as we expected starting our research. What surprised us the most is the fact that about 30% of surveyed people cannot correctly name the female external genital organs and do not know the localisation of erogenous zones. Only 10.5% knows what does it mean that the menstrual cycle is regular.

**Keywords: knowledge, structure and functions, female genital organs**

## **Sexual orientation assessment in women with Congenital Adrenal Hyperplasia (CAH)**

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Congenital adrenal hyperplasia (CAH) is one of the most common autosomal recessive hereditary disorders which features the lack of cortisol synthesis leads to excessive stimulation of the adrenal glands by adrenocorticotrophic hormone (ACTH). Moreover, the impairment of cortisol synthesis results in adrenal hyperplasia and excessive androgen synthesis. The clinical manifestations of congenital adrenal hyperplasia in adults result from adrenocortical insufficiency, hyperandrogenism, and the adverse effects of glucocorticosteroids used for treatment. What is more, initial observations indicate that sexual orientation in women with congenital adrenal hyperplasia seems to be different from healthy women, but until today there has been not any thorough research which would confirm it.

The study aimed to compare sexual orientation in women with congenital adrenal hyperplasia with the sexual orientation of healthy group.

The study included 20 women aged 18-40 years with congenital adrenal hyperplasia and 20 healthy controls. All participants declared sexual orientation. Moreover, all participants had clinical laboratory assessment performed.

Study results indicate that patients with congenital adrenal hyperplasia present more often homosexual and bisexual orientation in comparison to control group.

Author found that sexual orientation is correlated with the levels of specific androgens.

**Keywords: congenital adrenal hyperplasia (CAH), sexual orientation**

## **Which factors may lead to Sexually Transmitted Infections? Sexual research on polish university students**

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Sexually Transmitted Infections are present the most in people in the age of 19-24. That is why young societies should be properly educated before their start sexual life.

Our aim was to asses which factors connected with sexual life of polish students could contribute to spreading STIs among them.

10525 students took part in our research, most of them (70,1%) were women. Participants were asked to fill the original questionnaire which consisted questions involving risky sexual behaviors, awareness of Sexually Transmitted Infections and opinion about sexual education in Poland.

Among all participants, 76,4% had sexual initiation. 20,1% of interviewees admitted to having adventitious sex without condom, while 29,77% of them claim to underwent casual sexual intercourse after alcohol consumption. 5,1% of students claimed falling down with STI in the past. Mean score from STIs' knowledge test was 64,6% for women and 62,2% for men. 90,7% of students determine their knowledge as insufficient and report a need of improving sexual education in polish schools.

Students present a tendency to risky sexual behavior, awareness in the field of STIs among students society in Poland isn't enough such as having casual sex without condom or after alcohol consumption. Taking into consideration all that facts, we consider that improving professional classes from sexual education in Poland could contribute to boosting knowledge of STIs and reducing number of STIs' cases among youngsters.

**Keywords: sexual education, sexually transmitted infections**

## **Sexual function assessment in women with Polycystic Ovary Syndrome (PCOS)**

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

The study aimed to compare sexual function using female sexual function index (FSFI) questionnaire in women with polycystic ovary syndrome with consideration of clinical laboratory findings versus their sexual function in comparison to a control group of healthy.

The study included 56 women aged 18-40 years with polycystic ovary syndrome and 20 healthy controls. All participants completed Female Sexual Function Index (FSFI) questionnaire assessing sexual function in the domains of desire, arousal, lubrication, orgasm, satisfaction, and pain. All participants had additionally clinical laboratory assessment performed.

Study results indicate that patients with PCOS show to have a higher quality of sexual functions in comparison to control group.

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

**Keywords: sexual function, Polycystic Ovary Syndrome (PCOS)**

## **SEX, GODS AND ROCK'N'ROLL - how religion affects our sexuality?**

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Sexuality is an integral part of human life since the beginning of times. It accompanies us and we can't live without it, literally. As humanity changed in the course of time, so did sexuality – some rules, norms, practices and behaviors occurred, trying to regulate this sphere of our lives. What has the most impact on sexuality today? Does religion affect our views in that matter?

Our aim is to determine if there is any impact of different religions or world views on people sexuality.

The study was based on a survey conducted online. The author's questionnaire containing 72 questions, both single and multiple choice, was addressed to internet users. Gathered data was presented in Microsoft Excel. A number of different religion representatives took part in research. The group included Catholics, Protestants, members of Eastern Orthodox Church, Atheists, Agnostics, Jews, Heathens, Buddhists, Hindus and more.

The results showed that overwhelming majority of all respondents practice or practiced masturbation, despite the explicit prohibition in some religions. Pornography found its recipients in significant number of respondents. Research participants present diversified attitude to non marital sex – many of them does not recognize it as sin. More than a half of interviewers have never discussed sex in the family – it's one of the main reasons why almost all of them get information about sexuality from the internet.

1. A majority of respondents separates religious matter from sexuality. 2. At least half of families does not discuss sex. 3. An overwhelming majority of people draws knowledge about sexuality from the internet.

**Keywords: sexuality, religion**

## **Physical Activity in pregnant women in the opinion of men**

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Pregnant exercises have a beneficial effect on the pregnant woman. It is a great form of relaxation that will help prepare the woman's body for delivery. It is also a time when men accompany women in the birth school.

The aim of the study was to get to know the opinion of men about the physical activity of pregnant women.

The study covered a group of 100 men, in the range of 25 to 35 years old. The research was carried out using a diagnostic survey, and the research tool was the author's questionnaire.

75% of men think that a pregnant woman should attend a childbirth school. 64% of men consider a walk for the best physical activity for pregnant women, 51% chose swimming. 47% of men think that running is dangerous for pregnancy and 62% for strength training.

Men are positive about parenting schools.

**Keywords: men's opinion, pregnant woman, physical activity pregnant woman**

## Body esteem, sexual function and risk of FSD in women with sleep apnea

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The aim of the study was to assess sexual function and the risk of female sexual dysfunction (FSD) in women with obstructive sleep apnea syndrome (OSA).

23 women, 18-65 years old with diagnosed OSA was eligible for the study. Study group was compared with age and BMI matched control group of 23 healthy women. Body image was evaluated by Body Exposure During Sexual Activity Questionnaire (BESAQ). Sexual functions were assessed by Changes in Sexual Function Questionnaire (CSFQ), while sexual dysfunctions were diagnosed based on DSM-5 criteria during sexual interview.

2 cases of FSD in control group and 3 in study group were diagnosed. The prevalence of FSD did not differ in both groups (evaluated by DSM-5 criteria) nor did body image (evaluated by BESAQ), however women with OSA had worse general sexual function and lower frequency of desire assessed by CSFQ (37.3 vs 41.1 and 4.4 vs 5.4). Women with OSA were at greater risk for FSD (assessed by CSFQ) - 80% vs 48%. Furthermore women with sleep apnea and same BMI as control group had worse body weight self-evaluation (4.2 points-equivalent to overweight vs 3.01-equivalent to normal weight), worse self-acceptance (3.0 point vs 3.9), longer duration of relationship (33.5 years vs 29.5). More women with OSA were single (48% vs 9%), less of them had higher education (0% vs 22%).

Women with OSA are at the greater risk of developing FSD compared to healthy individuals. Sexual functions seemed to be worse in OSA group. Women with OSA had lower libido. Body esteem (based on BESAQ) .

**Keywords:** sleep apnea, sexual dysfunction, body image

## TINDER – sex application or something more?

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In the twenty-first century, the use of mobile devices and applications has become commonplace. They help to organize time, improve life and help make new friends. TINDER is one of the most popular dating applications in the world, it has been operating since September 2012, has 50 million users and has connected over 10 billion people. However, this is not the first application that connects people, which is why it still surprises the fact that it is so popular.

The aim of the study is to check real reasons of instaling TINDER.

2249 people took part in the survey, there were 1626 women and 623 men. 65,5% of respondents use the TINDER. The research instrument was a questionnaire consisting of 21 questions, about dating application – TINDER and reasons of instaling this application.

Most people use TINDER to test application - 55%. 41% of respondents are looking for long term relationship, 37% people said that they are looking for new friends and 33% that they are looking for love. Only 20% of TINDER users are looking for sex partner. 68% of people declare that they still maintain constant contact with the person known by the application.

Most people use TINDER for reasons such as looking for love, relationships or friendships not only looking for sex partners.

**Keywords: sex, dating application, tinder**



## Aspect of human sexuality and sexual education in term of three generations

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Human sexuality is related to a number of life aspects such as: sexuality, sexual identity, temperament, procreation and intimacy. It is shaped in human life through various social, family, cultural and religious influences. Undoubtedly, this is one of the most important zones in human's life.

The aim of the study is to compare knowledge about human sexuality between three generations and how to transmit it then and now.

The survey consisted of 203 families (consisting of grandparents, parents and children generation). In the group of 609 people over the age of 18, there were 441 women and 168 men. The research instrument was a questionnaire consisting of 20 questions, about knowledge of sex life and the sources of its acquisition. Participation was fully voluntary and anonymous.

Significant differences between generations, mainly related to the method of transferring information regarding human sexuality. Respectively the oldest generation of their knowledge was based on a conversation with parents, medium generation of knowledge which drew mainly from parents and literature; for the youngest generation the main sources of information about human sexuality were mass media. One of the main problems found in the survey is the fact that 90% of all respondents, the question of whether talk about sexuality with older generation, is a good source of information answered positively. However, only 47% of respondents talked about sexuality with older generation.

The differences between generations are an inherent aspect of knowledge in the field of sexuality.

**Keywords: sexuality, generator, sexual education**

## Sexual dysfunction and body image in men with sleep apnea

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The purpose of the study was to assess sexual function and the prevalence of sexual dysfunction as well as body image during sexual activity in men with obstructive sleep apnea syndrome (OSA).

A group of 61 men (31-76 years old) with OSA was eligible for the study. Age and BMI matched group of 68 healthy men served as controls. Sexual function was evaluated by International Index of Erectile Function (IIEF-15) in five domains: Erectile Function (EF), Orgasmic Function (OF), Sexual Desire (SD), Intercourse Satisfaction (IS) and Overall Satisfaction (OV). Sexual dysfunction was diagnosed based on DSM-5 criteria.

Study and control groups did not differ in mean age 57,8vs55,7years( $p>0,05$ ) nor BMI 31,7vs30,1( $p>0,05$ ). Men with OSA had worse EF (18.7vs24.6 points), IS (6.9vs10.2), and OF (6.9vs8.9) but better SD (8.7vs7.3). Erectile dysfunction (ED) was diagnosed in 21.3% of cases and 5.9% of controls( $p <0,0001$ ), whereas premature ejaculation in 18.0% vs 4.4% controls respectively. Presence of anxiety was an important impact factor for the prevalence of ED, whereas body weight self-evaluation and body image self-satisfaction for the prevalence of Hypoactive Sexual Desire Disorder–HSDD. The other risk factors were: lower age and HSDD for worse EF ( $R^2=0.75$ ), HSDD and longer duration of relationship for worse IS ( $R^2=0.55$ ).

**Keywords:** OSA, sexual dysfunction, sleep apnea, body image

## Sexual activity during pregnancy

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Sexual behavior during pregnancy varies during each trimester and is determined by emotional, psychosocial, hormonal and anatomical factors. Pregnancy is often associated with reduction or stoppage of sexual activity.

The aims of this study were to: establish women's sexual activity during each trimester of pregnancy, determine the factors influencing their sexual functioning.

Our study sample was derived from the Center of Woman's and Child's Health in Zabrze. The survey consisted of 2 parts. The first part included questions about socio-demographic characteristics and medical history. The second part was the Polish version of the Female Sexual Function Index (FSFI) questionnaire. All data analyses were conducted using StatSoft Statistica 13 PL.

624 women were included to the study and filled out the questionnaire during each trimester. The mean age of participants was  $28.2 \pm 5.5$  years and 344 women were married (55.1%). 47% (n=298) were nulliparous. Women were the most sexually active during their second trimester with a median of 8 intercourses/month). The mean total score of FSFI was:  $26.1 \pm 6.1$  in the first trimester,  $25.9 \pm 7.1$  in the second one,  $22.7 \pm 8.7$  in the last trimester.

Comparison of the mean scores for the overall sexual function of each trimester revealed clinically relevant sexual dysfunction in second and third. Nonetheless, there was no difference between first and second trimesters ( $p > 0.05$ ) and a significant decrease in the third trimester ( $p < 0.01$ ).

**Keywords:** pregnancy, sexual activity, FSFI

**JOURNEY  
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**INTERNATIONAL MEDICAL CONGRESS OF SILESIA**

# **SESSION OF STOMATOLOGY**

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## Does one's own mean good? - microbiological analysis of the ground tooth as an autogenous augmentation material

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Oral surgeries aimed at the regeneration of alveolar bone can be performed using autogenous material obtained from grinding the patient's own tooth.

The aim of our work was the microbiological analysis of the obtained autogenous bone-substitute material obtained by grinding a detained tooth, which was used to augment the alveolar process of the jaw after extraction of teeth 12 and 13 in a specific clinical case.

The material for microbiological analysis was obtained during the surgery performed in which the patient underwent the extraction of the detained tooth 38, which was then subjected to a grinding and sterilization process in accordance with the instructions enclosed by the manufacturer of the Smart Dentin Grinder from KometaBio company. During the procedure, samples containing the following materials were also collected: ground tooth prior to the sterilization procedure, after the use of lye, the patient's own bone, the patient's soft tissue and bone graft biomaterial. Next, the obtained material was subjected to microbiological analysis at the Department of Microbiology. Oral surgeries aimed at the regeneration of alveolar bone can be performed using autogenous material obtained from grinding the patient's own tooth.

The analysis showed the presence of the following microorganisms in the tested materials: Tooth after grinding - *S.epidermidis*, *S.salivarius* After 10 min in lye - *S.epidermidis*, *S.sanguinis* After immersion in a buffer - *Blautia producta* Biomaterial - *Sarcina* spp. Soft tissue- *S.mitis*, *N.subflava* Bone- *S.epidermidis*, *Abiotrophia adiacens*,

1. All the bacteria detected in the material prepared for augmentation belonged to the patient's physiological flora. 2. Microorganisms in autogenous

**Keywords:** ground tooth, augmentation, microbiological analysis

## **Myorelaxant effect of cannabis cream topical skin application, randomized, triple blinded study**

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The healing properties of cannabis have been known for centuries. In the past, ointments, tinctures and oils were made from them to cure any ailments. The cream producer informs us that it is a specimen with natural cannabis extracts, which is ideal for the care of overloaded, stiff and sore joints, muscles and ligaments. It is well absorbed and it does not irritate the epidermis.

The aim of the study was the evaluation of myorelaxant action of cannabis cream compared to placebo.

Parallel group, randomized triple blinded trial was performed. 20 patients were examined - 20 patients participated, divided into 2 groups - experimental and control. In rest muscle tonus (RMT) and muscle tension in rest and maximal muscle contraction of masticatory muscles was examined with EMG Neurobit Optima. After examination, patients in the experimental group received cannabis cream containers, and the control group patients with Ziaja hand cream - both in identical packaging. Patients were asked to use the preparations for 2 weeks, 2 times a day. After this period, the patients came to visit for a control EMG test. Data collected during electromyography was recorded in an Excel file. The results were statistically analyzed using the Statistica program.

Analysis of average values of muscle tension indicates a larger drop of electrical activity in the study, in comparison of the fall in the control group

The use of cannabis cream reduces the average electromyographic activity of the masseter muscles

**Keywords: cannabis cream, myorelaxant effect, EMG**

## **Grinding on screen part 2 - temperature measurement inside the pulp chamber during tooth preparation with the use of the thermo imaging camera.**

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Grinding is one of the standard procedures used in an everyday routine of a dentist. The grinding may be the source of iatrogenic pulpitis. Pulp damage is caused as a result of thermal trauma, as during the preparation the considerable quantity of thermal energy is being released. Vital teeth are sensitive to the effect of the high temperature because the critical value that is the reason for pulp necrosis, comes to 42 C.

The aim of the project was to measure temperature inside tooth chamber generated by working drills of various manufacturers during the grinding of post-extraction teeth crowns, depending on a degree of wear of the drills.

Four different drills were used for the measurement. Each of them was in a form of a cone with a rounded edge 1,6 millimetre in diameter. In the single session, three crowns were ground with each drill. Every tooth was bisected in sagittal plane. Thermo imaging camera registered the generated temperature from tooth chamber site after step preparation and further after obtaining the same thickness of the dentine in each tooth. All procedures were conducted complying with the commonly accepted standards using accelerating contra-angle handpiece and water spray cooling. After the treatment, the drills were sterilised.

The rise of the temperature inside the chamber correlates with wear level of the drill resulting from its usage and sterilisation.

Dentine is a good isolator. The lower the thickness of the dentine is the rise of temperature inside the chamber is higher. It is necessary to change drills regularly to prevent iatrogenic pulpitis. An important factor of the pulp protection is a minimally invasive preparation, proper cooling and work with intermissions.

**Keywords: thermography, grinding, drill, pulpitis**



## **Ozonated water effect on selected saliva biochemical parameters and antimicrobial activity on standard bacterial strains evaluation in vitro.**

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Ozone (O<sub>3</sub>) attract attention as possible alternative antiseptic in dentistry. Ozone has strong bactericidal, fungicidal, protozoicidal and virucidal properties without inducing drug resistance. Recent reports shows that both gas and water forms of ozone act antimicrobial against known pathogens associated with caries and periapical infections in human mouth. Ozone therapy also highly reduces growth of *A. a.*, *P. gingivalis* & *Tanerell* spp. It is not used as standard therapy in dentistry because of lack of scientific fundamentals and proper control and possible negative effects on oral biochemistry. Some dentist used ozone only based on empiric results.

The aim of this work is to check how ozone free radicals from ozonated water affects on selected biochemical parameters of saliva and growth of *S. mutans*, *E. faecalis* & *A.a* bacteria.

Microbiological examination in vitro - into test-tubes with 0,5ml of ozonated water 0,5McF of standard strains of *S. mutans*, *E. faecalis* and *A. a* bacteria was added. Next after 5, 10 and 15 minutes samples were seeded on microbiological blood agar base. Samples were incubated for 48h. Grown bacteria colonies were counted both in test and control group. In addition the effect of ozonated water on saliva composition in 5 volunteers was examined. The biochemical composition of saliva was examined before and after ozonated water use. Spectrofotometer and liquid chromatography was used to evaluate specific saliva components concentration.

There was no bacteria growth in test group in contrast to massive bacteria growth in control group. Ozonated water stops *S. mutans*, *E. faecalis* and *A. a* bacteria and does not affect saliva pH, buffer capacity.

**Keywords: Ozonated water, oral microbiology, oral biochemistry, ozone, ozone in dentistry**

## **Colgate Total® Visible Effect - marketing gimmick or improvement the effectiveness of brushing teeth?**

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There are various types of toothpaste available on the market. A mechanical cleaning method is considered the most effective type of removal of soft dental deposits. Consumption of cleansing foods, rinsing, irrigation, use of interdental brushes, dental floss belong to the methods of additional home prophylaxis. There are pastes on the market that change color.

Comparison of the effectiveness of 2 plaque removal - Colgate Total® Toothpaste Visible Effect and Colgate Total® Original.

50 students of dentistry in the 3rd, 4th and 5th year took part in the study. Each of them received an identical toothbrush and Colgate Total® Original paste in the first week of the study and Colgate Total® Visible Effect in the second week. They were brushing teeth with their own brushing technique and at the time they considered it sufficient or until the paste color changed. The teeth cleaning time was determined and the plaque was stained with a Dropingo preparation. The API hygiene index was measured.

In the group of dentistry students a color change of the Colgate Total® Visible Effect during brushing has reduced the tooth cleaning time compared to the Colgate Total® Original toothpaste and therefore the increase API value. There was an increase in the average API value from 38% for the Colgate Total® Original paste at 46% for the Colgate Total® Toothpaste Visible Effect.

In the group of dentistry students, the paste changing the color did not increase the effectiveness of brushing teeth

**Keywords: toothbrush, toothpaste, oral hygiene**

## **Analysis of the pregnant women's knowledge about dental prophylaxis during pregnancy**

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Pregnancy is an important period in the life of every woman. At that time, the future mother is exposed to an increased risk of oral cavity diseases, that are the results of hormonal and immunological changes and the modification of eating habits. The method of dental care for a pregnant woman should include different aspects regarding to dental prophylaxis, early diagnostics and treatment.

The purpose of the research was the evaluation of oral health knowledge and awareness among pregnant women.

An original questionnaire was prepared. It included 32 questions. The survey was distributed among pregnant women at childbirth education classes in Zabrze, Bytom, Piekary Śląskie and Żory. 120 fully completed questionnaires were included into the analysis.

66,9% of responded pregnant women went to the dentist and only 26,6% were sent there by their gynaecologist. 50,4% of respondents think that pregnancy has negative effects on mothers dentition and 92,2% of them think that gums should bleed during pregnancy. 40,5% of respondents think that oral hygiene of the baby should start when first tooth appears in the mouth and 17,2% think that oral hygiene should start after first year of life. 77,2% of mothers think that babies should be breastfed as long as their want.

The results of this study indicate that oral health knowledge and awareness among pregnant women is low. Moreover, the study highlights the problem of stereotypes associated with dental care among pregnant women and dental awareness among gynaecologist

**Keywords: pregnancy, questionnaire, dental prophylaxis**

## Does diabetes impact on oral health?

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Diabetes mellitus is a metabolic disorder in which there are high blood sugar levels over a prolonged period. If left untreated, diabetes can cause many complications such as cardiovascular disease, stroke, chronic kidney disease, foot ulcers, and diabetic retinopathy. Diabetes may also cause changes in oral cavity and impact negatively on oral health.

Presentation the impact of diabetes mellitus on oral health - the condition of teeth, the amount and composition of secreted saliva, the amount of bacteria such as Cariogenic *Streptococcus mutans*.

The research was carried out among 10 child patients from Department and Clinic of Endocrinology and Diabetology for Children and Adolescents (Wrocław Medical University) and among 10 child patients from Department and Clinic of Dentistry and Pedodontics (Wrocław Medical University) using bacteriological tests GC Saliva-Check Mutans and buffer tests GC Saliva-Check Buffer. Each patient was also examined.

1. The average pH value among healthy patients was 6,96, among diabetics was about 6,62. 2. There were 9 positive and 1 negative results of Saliva-Check Mutans among diabetics. 3. There were 5 positive and 5 negative results of Saliva-Check Mutans among healthy patients. 4. Among diabetics there were: 4 patients with medium risk and 6 patients with high risk of caries. 5. Among healthy patients there were: 1 patients with low risk, 3 patients with medium risk and 6 patients with high risk of caries.

1. More attention should be paid to the prevention and awareness of patients about caries. 2. The caries risk among diabetics was higher than among healthy patients

**Keywords: caries, diabetes mellitus, risk**

## The Attitude of Polish and American Mothers Toward Breastfeeding - A Questionnaire Study

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Work's tutor: Anna Turska-Szybka, DDS, PhD

Exclusive breastfeeding is recommended up to 6 months of age and no longer than 12 months.

To compare the attitude of Polish and American mothers toward breastfeeding.

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.

There were 500 Polish and 504 American questionnaires 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 ( $p>0.05$ ). 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 ( $p<0.05$ ). 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 ( $p=0.122$ ).

Most mothers in Poland and the U.S. both breastfed and bottle-fed. 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.

**Keywords:** breastfeeding; early childhood caries; pediatric dentistry

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

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Work's tutor: Anna Turska-Szybka, DDS, PhD

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

To compare the oral health habits and modifying factors of both American and Polish mothers and their children

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

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.

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.

**Keywords:** oral health habits; early childhood caries; dental caries; pediatric dentistry

## **The differences in performance of Class I composite restorations when polished immediately compared to polishing after one-day water storage.**

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The marginal integrity of a light-activated composite filling is extremely important as bacterial penetration also known as microleakage can occur if there are gaps between the composite filling and the walls of the cavity. Should this occur it is likely there will pulpal damage will be caused. This shows us that the mechanical properties of the restorative filling material are important to ensure we get proper sealing of the cavity else it is likely there will be gap formation in the wet, warm oral cavity oral environment. Shrinkage of the resin composite material can also occur during polymerisation.

The aim of the study was to test whether premature finishing would significantly reduce gap formation as opposed to delayed finishing.

10 extracted human teeth were selected (a mixture of molars and premolars). 5 of them were polished directly after applying the following restoration materials: Gradia, Sonicfill. The other 5 were preserved for one day in water storage and were filled with the following restoration materials Herculite, Filtek Bulk-fill. Afterwards the teeth were then sectioned and the gap between the composite filling and the walls of the cavity was filled with methylene blue. Photos of sections of teeth's sections were taken. Line scanning technique was used for the evaluation of diameter (size)

For all resin composites products differences were observed in the marginal gap size formed between immediate time point and after one- day storage.

Resin composite-filled Class I restorations which were polished after one-day delay presented lower gap formation compared with finishing immediately after setting

**Keywords: Class I gap formation, light-activated resin composite fillings, polishing**

## **The influence of fixed orthodontic appliances on the patients quality of life (QOL) and selected aspects of their use during orthodontic therapy.**

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The aim of the study was evaluation of the influence of fixed orthodontic appliances on the patients quality of life (QOL) and selected aspects of their use during orthodontic therapy.

Patients (n=138, 103 female, 36 male, average age=23 ) enrolled to the study were treated with fixed orthodontic appliances (attended The Department of Orthodontics in SUM Zabrze, Poland and filled the questionnaire via internet). Inclusion criteria were: orthodontic therapy with fixed appliances (braces in single or both arches, during the OT, or after completed OT), patients agreement for taking part in the research study. Exclusion criteria were: age under 13 and over 32, different pain origin in oral cavity, psychological disorders, poor oral hygiene. Study methodology consisted of 44 questions in an internet survey (or in personal) concerning 6 aspects of the QOL: the quality of food consumption, sport activity, hobbies, speaking, pain in oral cavity, human relations, filled in by patient, during or after the completed therapy.

The main survey results were: negative aspects: difficulties with chewing hard and sticky food (71.2%), limitation in sport activity (3%). Positive aspects: speech and pronunciation difficulties lasted no longer than one month, a positive aspect on interpersonal relations was observed (self-confident (74.7%)). 86% of population examined in the research study was satisfied with the achieved results.

Summarizing OT does not impaired the QOL of the treated patient. On the basis of the study a leaflet was prepared for patients before the therapy

**Keywords: orthodontic treatment, fixed appliance**



## Autistic child as a dental patient - parents' questionnaire

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According to estimates, the incidence of ASD is currently 1 in 100. This phenomenon should encourage dentists to pay attention to the specific profile of autistic patients resulting from problems in interpersonal contacts and sensory processing disorder.

The aim of the study was to cognize parents' opinions and knowledge about selected aspects of their ASD children as a dental patients.

An original anonymous online survey placed on the Google Forms platform and shared with members of 8 Polish support groups associating the parents of children with ASD. 153 surveys completed (3 rejected due to incomplete data; N=150). Single or multiple choice questions with an additional open field (39). Maximum error 0.08 ( $\alpha = 0.95$ ,  $f = 0.5$ ). Data analyzed statistically using Microsoft Excel, Splunk, Chi-Square Calculator.

93.5% of the respondents were women. 51.6% of parents recognize their competences in the matter covered by this study as satisfactory, but none of them described dentists in the same way. 70.6% of children were hypersensitive to the light from dental lamps and the sound of dental drills. The parent's age <30 years positively correlated with the fear of dental treatment of the child ( $p = 0.0012$ ). Approaching close to the statistical significance ( $p = 0.0659$ ) a greater fear of fluoride was observed in parents with higher education.

Mothers of autistic children seem to be more involved in childcare than fathers. Younger parents are more afraid of dental treatment of their children with ASD diagnosis. Those with higher education more often disagree on fluoride prophylaxis among their children. Further research is needed

**Keywords:** autism, parents, pediatric dentistry

## The study of mercury release from dental amalgam fillings.

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Z

Work's tutor: Dr n. med. Agnieszka Fischer

Dental erosion is a chemical progressive degradation of tooth substance in acidic environment unrelated to the presence of dental plaque. Dehydration induced by sport activities reduces protective salivary flow and its buffering capacity, which may aggravate an erosive effect of the consumed acidic beverages.

Aim: to evaluate the erosive potential of ready-to-drink and powdered sports drinks

Seven ready-to-drink sports beverages (Oshee, Isotonic Lemon Taste, Gatorade, Powerade, Isotonic Veroni, Isostar, 4Move) and four prepared from powder (Isoactive, Race Isotonic Drink ALE, IsoPlus, Isostar) were analysed. A 1% citric acid was used as reference. Human enamel specimens (5 per group) were exposed to the tested solution in a short pH-cycling model (1 min erosion – 5 min artificial saliva without mucin) repeated 5 times. Surface microhardness was measured before and after the pH-cycling using Vickers indenter. A correlation between pH of the drink and enamel softening was calculated.

All tested solutions decreased enamel microhardness. Erosive potential of ready-to-drink beverages was higher than powdered. There was a significant negative correlation between enamel softening and pH value of the drink ( $r=-0,55$ )

Sports drink increase the risk for dental erosion. Powdered drinks have lower erosive potential than ready-to-drink form

**Keywords: sports drinks, dental erosion, erosive potential,**

## **Keratocystic odontogenic tumor (keratocyst) in the medical documentation of The Department of Cranio-Maxillo-Facial and Dental Surgery. at the Medical University of Silesia in Katowice**

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Views on the morphology, growth and molecular biology of keratizing odontogenic cysts have been changing in literature over the years. It was considered as odontogenic tumor but according to the World Health Organization Classification of Head and Neck Tumours from 2017 it is classified as odontogenic cyst. Literature describes different algorithms of treatment: simple enucleation of a cyst or more aggressive which include cystectomy with chemical curettage or cryodestruction and segmental resection of the bone.

The purpose of our work is assessment of the effectiveness of treatment keratizing cystic odontogenic tumour by simple enucleation.

The research material was retrospective analysis of medical documentation of 49 patients (23 men and 26 women) from The Department of Oral Surgery and Implantology in Medical University of Silesia in Katowice. Those patients had KCOT diagnosed in the years 2014-2017. In any case the diagnosis was confirmed by histopathology examination. Factors that were analyzed: age, sex, localization, size, radiological morphology of bone loss and connection with impacted tooth. Clinical and histopathological information about cysts were compared. Bone regeneration after surgery was controlled on orthopantomogram.

All patients included in this study were surgically treated for odontogenic cyst. In 34 cases it was located in mandible and in 15 cases in maxilla. 32 cases were connected with impacted tooth. In 11 patients there were no connection with tooth. In 6 cases radical cyst were diagnosed.

**Keywords: keratocystic odontogenic tumor, keratocyst, odontogenic cyst**

## **Assessment of the impact of various factors on the occurrence of lichen planus and lichenoid lesions in Patients of Clinic of Conservative Dentistry and Periodontal Diseases in Zabrze based on medical documentation analysis**

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Lichen planus is a chronic, noninfectious mucosal and skin disease. It is not a common condition. Research carried out within the former Cracow province indicated the occurrence of lichen planus in the amount of 1.11% (Knychalska-Karwan), the average morbidity is 0.1-2.2%. Aetiological factors are autoimmune diseases, infectious (viral), psychoneurogenic, chemical, metabolic, genetic and mechanically irritating agents.

Lichen planus commonly occurs with general diseases and more often in women, especially after the age of 60. Despite many years of clinical trials, the aetiology of this disease is not fully explained.

The purpose of our research was to analyze the files of patients treated for different types of lichen planus in the Clinic of Conservative Dentistry and Periodontal Diseases in Zabrze, and showing the relationship between the occurrence of this disease entity and general and local factors.

We analyzed 7228 files from 4 years (from 2014 to 2017), out of which we distinguished 371 patients with lichen planus and lichenoid lesions. They were mainly residents of Silesia, as well as people referred from other provinces. We have mainly focused on detailed analysis of the patient's medical history for the occurrence of systemic diseases.

We observed correlation between the appearance of mucosal lichen planus and lichenoid lesions with hypertension, hypothyroidism (treated with Eutyrox) and amalgam fillings

**Keywords: lichen planus, lichenoid lesions, hypertension, hypothyroidism, amalgam fillings**

## **Evaluation of functional properties and the possibility of using intraoral mouthguards during surgical procedures with endotracheal intubation.**

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Intraoral injuries, especially tooth damage are one of the complications of endotracheal intubation performed during general anesthesia. Placing the laryngoscope in the oral cavity in order to locate the tracheal tube intraluminal lower respiratory tract may result in complete or partial dislocation of the tooth, fracture or rupture of its crown or root and also as damage to permanent restorations placed the oral cavity.

The purpose of the study Clinical evaluation of functional properties and the possibility of using intraoral mouthguards during general anesthesia for surgical procedures.

Patients qualified for surgical procedures under general anesthesia were supplied with intraoral mouthguards made in depth forming technique (EVA, Erkodent, Germany). The possibility of using mouthguards during intubation and their functional properties were evaluated by anaesthesiologists performing general anesthesia. Results Intraoral mouthguards have been evaluated highly in terms of properties.

During using mouthguards anaesthesiologists did not find any disturbances in ventilation or perfusion. Retention of mouthguards was correct during the entire procedure and their use was considered safe and beneficial to the patient.

Individual intraoral mouthguards should be used during surgical procedures with endotracheal intubation and should be part of the patient's routine preparation for surgery.

**Keywords: mouthguard, intubation, injury.**

## About fluorine among pregnant women

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Dentists undertake many activities aimed at improving oral health. One of them is fluoride prophylaxis - both the professional used in dental offices and the home prophylaxis used individually by patients. Pregnant women are a special group of patients, who should be particularly aware of the actions taken by the dentist.

Presentation daily habits of fluoride prophylaxis among pregnant women.

The research was carried out among patients of 2nd Department and Clinic of Gynaecology, Obstetrics and Neonatology at Jan Mikulicz-Radecki University Teaching Hospital using our own questionnaire. The questionnaire consists of 16 one-choice questions (yes / no).

1. 93% of respondent women use the toothpaste with fluoride. 2. 71% of respondent women use rinses, flosses and gels containing fluoride. 3. 29% of respondent women was informed about fluoride influence by their dentists. 4. 44% of respondent women did not look for information about fluoride during their pregnancy.

1. Most of pregnant women think that using the fluoride in recommended doses do not harm to health. 2. Most of pregnant women are aware of the fluoride effect on caries development and progression. 3. More attention should be paid to fluoride prophylaxis during pregnancy.

**Keywords: fluoride prophylaxis, pregnant women**

**JOURNEY  
THROUGH  
MEDICINE**  
APRIL 25-26 th 2018



**INTERNATIONAL MEDICAL CONGRESS OF SILESIA**

# **SESSION OF TRANSPLANTOLOGY**

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## **Does the neutrophil to lymphocyte ratio (NLR) or platelet to lymphocyte ratio (PLR) can be a predictor of primary graft dysfunction after orthotopic liver transplantation?**

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Primary graft dysfunction (PGD) is a multifactorial syndrome related to the worse outcomes after liver transplantation. PGD may be subdivided into early allograft dysfunction - diagnosed with serum bilirubin level  $\geq 10\text{mg/dL}$  ( $171\mu\text{mol/l}$ ) or  $\text{INR} \geq 1.6$  or alanine and aspartate transaminase levels  $\geq 2000\text{IU/l}$  on 7th postoperative day; and primary nonfunction - defined as need for retransplantation or patient death within first 7 days.

We aimed to find out if the NLR or PLR may be a new predictors of PGD occurrence.

It was a single-centre registry of 109 patients who underwent the orthotopic liver transplantation between 2012 and 2016. Analysis included preoperative factors from medical histories and intraoperative changes from anesthesia carts that can trigger PGD presence. In the statistical analysis the logistic regression model and ROC analysis were used.

14% of patients were diagnosed with PGD. The most significant predictors of its occurrence were: ALT (OR=1,001 p=0,046), Neutrophils (OR=1,14 p=0,017), etiology of Primary biliary cirrhosis (OR=5,62 p=0,03) and mean arterial pressure after reperfusion (OR=0,937 p=0,02). NLR (OR=1,01 p=0,74) and PLR (OR=0,99 p=0,75) were not significant.

NLR and PLR alone are not appropriate indicators of PGD presence. The most useful seem to be the preoperative neutrophils ratio and arterial pressure instability during reperfusion phase of surgery.

**Keywords: orthotopic liver transplantation, primary graft dysfunction, neutrophil to lymphocyte ratio, platelet to lymphocyte ratio, neutrophils ratio**

## Evaluation of lung donors qualified by lung transplant team of Silesian Center for Heart Diseases

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Lung transplantation is a surgical procedure, in which recipients with end stage lung disease have their lungs replaced by donors' ones. Before the procedure, donor's are thoroughly tested.

The aim of the study was to analyze donors, whose lung are being transplanted in Silesian Center for Heart Diseases (SCCS).

Study group consisted of 78 patients qualified as lung donors by SCCS lung transplant team between 2012 and 2017(32 women and 46 men, mean age: 37,78 yo.)Data was obtained from medical records, Donor's Qualification Card in particular.

The general average survival after lung transplantation is 658 days. The most common cause of transplantation was cystic fibrosis. The level of the white blood cells varied from  $3,6 \times 10^9/L$  to  $38,4 \times 10^9/L$  (n=72), with the average level of  $14,36 \times 10^9/L$ . The average level of urea(n=66) was 35,9 mg/dl. 36% of the those results were above the reference range. The average level of creatinine(n=74) was 1,09 mg/dl, 27% of the results were above the reference range. According to Sodium level(n=75),15 donor obtained results within the reference range, 60 did not – presenting hypernatremia mostly. According to Potassium level(n=74),56 of donors' results were within the reference range, 18 were not – presenting hypokalemia mostly. 44 of the donors were oxygenated with 100% oxygen, presenting the average pO<sub>2</sub> level of 407,48 mmHg.

Most of the lung donors present hypernatremia. Significant number of patients presented increased urea and creatinine levels.

**Keywords:** organ harvesting; lung transplantation; organ donors; solid organ transplantation

## **Risk factors of late-onset noninfectious pulmonary complications in pediatric allogeneic hematopoietic cell transplant recipients**

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Late-onset noninfectious pulmonary complications (LONIPCs) after allogeneic hematopoietic stem cell transplantation (HSCT) comprise bronchiolitis obliterans syndrome (BOS) and cryptogenic organizing pneumonia (COP). Although their incidence is quite low (10-16%), they are a major contributor to mortality and decreased quality of life.

To identify risk factors for LONIPCs in children undergoing HSCT Methods and

We retrospectively reviewed medical records of 160 consecutive pediatric patients, who received allogeneic HSCT from February 2005 to June 2017 in University Children's Hospital of Cracow and survived at least 90 days after HSCT. Chi-square test of independence with Yates correction was used to determine possible risk factors for LONIPCs.

145 patients at the median age of 7.62 years (IQR, 3.93-12.55) received allogeneic HSCT. Seven patients developed LONIPCs (4.3%), at a median of 100 days (94.8-109 days) after HSCT. Three of them (42,9%) suffered from BOS, three (42,9%) from COP and one (14.28%) developed both complications. Statistical analysis showed that engraftment syndrome (ES) (HR, 5.87 (95%CI 1.32-26.24, P=0.012), pulmonary infections within first 100 days following HSCT (HR, 8.55 (95%CI 1.58-46.23, P=0.007) as well as chronic graft-versus-host disease (GVHD) (HR, 15.09 (95%CI 1.75-129.89, P=0.002), were associated with higher risk of LONIPCs. No significant association was found between age, gender of recipient or donor, graft type and acute GVHD.

Engraftment syndrome, pulmonary infections within 100 days following HSCT and chronic GVHD, and are risk factors for developing LONIPCs in pediatric patients receiving HSCT.

**Keywords: Children, Pulmonary, Late, Noninfectious, Allogeneic, Hematopoietic, Transplantation**

## Therapy costs of two different formulations of antithymocyte globulin used as an induction therapy in kidney transplant recipients

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Antithymocyte globulin (ATG) is widely used as an induction therapy in kidney transplant recipients (KTRs). Two ATG formulations are currently used in Poland: Grafalon (Fresenius®) and Thymoglobulin (Sanofi®). Both formulations substantially differ with dosage forms (vials a 100mg vs. vials a 25mg, respectively) and the cost of single dose (1139,40 PLN per 100mg vs. 891 PLN per 25mg, respectively). On the other hand, as therapy is guided by daily absolute lymphocyte number, there are substantial wastes of Grafalon, but not of Thymoglobulin.

The aim of present study was to analyse the real costs of therapy comparing both ATG formulations in patients transplanted in Katowice between June 2013 and January 2018.

We have analyzed 119 consecutive kidney transplant recipients, 49 treated with Grafalon and 70 treated with Thymoglobulin, comparing the total drug dose used and total cost of whole therapy.

The mean age and BMI were similar in both groups. Patients treated with Grafalon received significantly higher mean cumulative dose (966.8 vs. 379.6 mg respectively,  $p < 0.001$ ) and mean dose per kg of body weight (14.5 vs. 5.5 mg/kg,  $p < 0.001$ ) than those treated with Thymoglobulin. During the therapy with Grafalon, the mean wasted, not used dose was 203 mg, which costed 2312.70 PLN. Nevertheless, the total cost of therapy paid by healthcare provider was similar for both formulations (13552 vs. 13530 PLN accordingly).

Despite the major differences in dosage forms and single dose costs of both formulations of ATG, total cost of therapy paid by healthcare provider was similar in a large cohort of kidney transplant recipients.

**Keywords:** kidney transplantation, antithymocyte globulin, induction therapy, treatment cost

## Comparison of patients with Interstitial Lung Diseases at the qualification for lung transplantation – a single center study

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Work's tutor: Marek Ochman MD PhD

Interstitial Lung Diseases (ILD) consist of more than 200 diseases, which manifest by progressive exercise dyspnea, radiological lung changes and ventilation restrictive disorders.

Aim of the study was to compare 2 groups of lung transplant candidates, which division is based on ILD classification by Ryu from 2007, depending on their status during the time of qualification to LT Programme of Silesian Center for Heart Diseases (SCCS).

Study group consisted of 81 patients with ILD who died while being on a national lung transplant waiting list (NLTWL). 1st group is composed of patients with diseases of known cause (N=21, 9 women, 12 men). 2nd group (N=60, 29 women, 31 men) includes patients, whose disease is of unknown cause. Medical records including biochemistry, pulmonary functional tests, echocardiography, pulmonary artery catheterization and arterial blood gas test were analyzed.

Mean time on NLTWL was 289,77 days for women and 306,41 days for men in group 1; 357 and 297,83 days respectively in group 2. Average FEV1% result in group 1 was better among women (54,6%) compared to men (41,84%). However, in group 2 men achieved a mean result of 51,15%, while women obtained 38,12% on average. Mean NT-proBNP level was 399,65pg/ml among women and 2633,95pg/ml among men from group 1. The same parameter was compared amongst women ( 585,45pg/ml) and men (1886,61pg/ml) from group 2.

Even though all of the patients suffer from different kinds of ILD, there are some differences in parameters between compared groups. Obtained results encourage further research on larger study group.

**Keywords:** ILD, lung transplantation

## **Assessment of the cardiac function of lung transplant candidates due to chronic obstructive pulmonary disease – a single center study**

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End-stage lung diseases, such as chronic obstructive pulmonary disease (COPD) affect multiple organs. Chronic respiratory failure associated with this state increases the risk of developing heart failure.

The aim of the study was an assessment of cardiac function of lung transplant candidates due to COPD.

The study group included 26 patients, who were qualified to lung transplantation due to COPD based on extensive tests, including right heart catheterization, UKG and biochemical serum tests. Pulmonary arterial hypertension (PAH) and other heart diseases were assessed. Data was obtained from medical record at qualification and analyzed according to 2015 ESC/ERS Guidelines for the diagnosis and treatment of pulmonary hypertension.

Mean EF among studied group was 56,09%. Only 4,88% of the patients had EF below 40%. Among 38,46% of patients, secondary PAH can be observed, based on mean pulmonary artery pressure exceeding 25. Right atrium mean pressure (RAPm) value was 6,63 mmHg on average among PAH COPD patients. This result did not differ from the average RAPm of the entire study group (6,75 mm Hg). Mild Tricuspid valve insufficiency was observed among 22,58% of the COPD lung transplant candidates.

PAH can occur among patients with end-stage lung disease. Lung transplant candidates due to COPD are no exception. Such patients' mean EF is within normal limits, yet it cannot be said that their hearts are not influenced by their lung disease.

**Keywords: Pulmonary arterial hypertension PAH, transplantation, lungs, surgery, qualification, copd, chronic obstructive pulmonary disease**

## Results of qualification for lung transplantation in cystic fibrosis - a single-center study

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Cystic fibrosis is a genetic disease without known causal treatment. Respiratory function continues to decrease due to bronchiectasis and bronchiolitis. Lung transplantation is often the only therapeutic option at the critical stage of this condition.

The aim of the study was to assess the outcome of the patients qualified for lung transplantation in a single center study.

The study group consisted of 30 patients (15 men and 15 women, age: 16-55) qualified for lung transplantation due to cystic fibrosis between 2011-2017 in Silesian Center for Heart Diseases (SCCS). Research was based on medical records.

The mean age at qualification date was 24 years old. 20 out of 30 patients had lung transplantation at the mean age 25,2 years old. 10 patients died before transplantation. 16 graft recipients are still alive. The mean time spent on the national lung transplantation waiting list was 313 days. Mean time after transplantation among living patients was 951 days. 75% patients reached 1-year survival after transplantation. 30% of the patients has already reached 3-year posttransplant survival. After transplantation, 100% of the patients noted improvement of 6-minute walk test and spirometry results.

Lung transplantation improves pulmonary function among cystic fibrosis patients. What is more, it lengthens the life of transplant recipients. Even though, such treatment carries certain risks, its benefits are greater.

**Keywords:** lung transplantation, cystic fibrosis

## **Bronchoscopic interventions among lung transplant recipients of Silesian Center for Heart Diseases**

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Lung transplantation (LT) is often the only therapeutic option for patients with end-stage lung disease. This procedure is also associated with certain risk of complications associated with airway anastomoses, that can be treated with bronchoscopic interventions (BI).

The aim of the study was to assess the incidence of bronchoscopic interventions developed in the post transplantation period.

The study group consisted of 99 patients (37 women, 62 men; mean age:45), who underwent LT from March 2007 till December 2015 in Silesian Center for Heart Diseases in Zabrze. Study includes 57 SLT recipients (57.57%) and 42 BSLT recipients (42.42%). 40 patients (40,4%) needed bronchoscopic interventions. The procedures were as follows: endobronchial stents placement, balloon dilation and argon plasma coagulation.

Among the group that required BI, 50% of recipients underwent SLT. Remaining 50% underwent BSLT. The most common underlying lung diseases of mentioned group were: COPD – 16 (40%), IPF – 7 (17,5%), IPAH -5 (12,5%) and cystic fibrosis – 4 (10%). Mean age of BI patients was 47. Balloon bronchoplasty was carried out on 29 patients (72,5%). Such treatment was applied 325 times. Argon plasma coagulation was used among 26 recipients. It was applied 173 times (an average of 6,7 times per patient). Endobronchial stents were placed 68 times among 23 patients (mean number of stents per patient was 2,9).

Significant number of patients after LT requires BI. The most common BI was balloon bronchoplasty. There was no correlation between diseases for which patients were suffering and incidence of endoscopic interventions.

**Keywords: Bronchoscopic interventions, Lung transplantation, Solid organ transplantation, Bronchoscopy**



## **Idiopathic Pulmonary Arterial Hypertension versus Cystic Fibrosis – assessing the MELD score among lung transplant candidates**

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Model for End-Stage Liver Disease (MELD) score is a wide world scale which helps doctors to assess the severity of chronic liver disease. Diseases like Idiopathic Pulmonary Arterial Hypertension (IPAH) or Cystic Fibrosis (CF) seem to predispose not only to lung but also liver insufficiency.

The aim of the study was to assess the liver function of patients diagnosed with IPAH and CF, qualified for lung transplantation due to end-stage lung disease using MELD score.

Study group consisted of 58 patients (31 women and 27 men) qualified for lung transplantation in Silesian Center for Heart Diseases (SCCS) between 2004-2016. Candidates were diagnosed with IPAH (n=29) and CF(n=29). MELD score was calculated individually for each patient, using relevant data. What is more, the mortality among patients was compared.

In the study group, the average MELD score was 10,34. There was a slight difference between mean MELD score among women and men: 10,75 and 9,83 respectively. Patients diagnosed with IPAH acquired average MELD of 13,42 and those with CF acquired 6,88. Also, the mortality among candidates with IPAH was 55,17%. Mortality among patients with CF was 31% Twice as many women diagnosed with IPAH died in comparison to man. The situation in Cystic Fibrosis is opposite.

Due to high results in MELD score, patients diagnosed with IPAH should be under special supervision. Patients with IPAH obtained higher mean MELD results than those with CF. Mortality on national lung transplant waiting list is higher among patients with IPAH than among CF ones.

**Keywords: MELD score, IPAH, Cystic Fibrosis, lung transplantation**

## **The analysis of causes of disqualification among waiting list kidney transplant candidates at the final cross-matching and recipient selection**

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Directly prior to the transplantation, potential kidney transplant candidates from the active waiting list are chosen and called to the transplant centre according to the position on a cross-match list, performed with a given donor. During this procedure some potential recipients are disqualified.

The aim of the present work is to analyse the spectrum of causes of potential kidney recipients exclusion immediately before transplantation.

The detailed causes of disqualification among kidney recipients on the waiting list were analysed, based on 2015-2017 protocols. The recipients of simultaneous pancreas-kidney transplantation were excluded.

In the analyzed period, we performed 352 kidney transplantation, including 23 patients from "urgent" list and 173 patients occupying the first two positions on the cross-match list. Organs were procured from 194 donors. Overall, 404 potential kidney recipients were omitted, including 14 patients listed in the "urgent" mode. The most frequent causes of disqualification were: active infection (n=77), incomplete or expired medical test results (n=59), significant weight or age donor-recipient disparity (n=46), no telephone contact with dialysis department (n=21) or with patient (n=8), patient agreement withdrawal (n=19), and surgeon decision (n=20).

1. The actual rate of potential kidney recipient disqualifications during the cross-matching procedure is relatively high. 2. Some of those exclusions, especially those due to incomplete medical records or invalid communication, could be avoided.

**Keywords: kidney transplantation, waiting list, disqualification**

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INTERNATIONAL MEDICAL CONGRESS OF SILESIA

# SESSION OF CASE REPORTS INTERVENTIONAL I

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## Caudal Regression Syndrome – Natural history of diabetic fetopathy

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Chronic hyperglycemia leads to metabolic disorders associated with proteins, lipids, water and electrolyte imbalance in organism of pregnant woman. As a result, developing fetus is exposed to damage of different systems such as circulatory or nervous system. One of diabetic fetopathy is caudal regression syndrome (CRS). These syndrome is associated with developmental disorders of lower part of the body. It can lead to lumbar spine anomalies, spinal cord hernia, hypoplasia of lower limbs, defects of genitourinary system and atresia of colon. CRS may co-exist with defects of central nervous system or circulatory system.

Patient in her first pregnancy, complicated by uncontrolled diabetes in D-class (in the 1st trimester HbA1C was 9,2%). Ultrasound examination of fetus showed hydrocephalus and malformation of lower limbs. Woman decided to continue pregnancy. In the 37th gestational week, patient was admitted to Clinic in order to preparation to labour. Ultrasound image revealed residual brain with massive hydrocephalus and hypoplastic lower limbs. Due to fetal head circumference (>12 SD), the patient was qualified to C-section. State of a newborn was severe, the birth weight was 3670g, Apgar score: 3/5/6/7. Suspected prenatal abnormalities were confirmed. Genetic basis was excluded and caudal regression syndrome was diagnosed. It was decided to set up a ventriculoperitoneal shunt due to an increasing hydrocephalus. 3 days after the intervention the baby died.

Education connected with pregnancy plays an important role for women who suffers from diabetes mellitus type I. Uncontrolled diabetes may lead to different complication including serious developmental defects.

**Keywords: caudal regression syndrome, diabetes mellitus, pregnancy**

## **From dyspnea to lung transplantation - a case of familial idiopathic pulmonary fibrosis**

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Idiopathic pulmonary fibrosis (IPF) is chronic interstitial pneumonitis. The cause of this disease is unknown. In 20% of cases, IPF has a genetic background. Familial IPF must meet the criterium of 2 or more cases of the disease within close family.

Case report describes a 39 years old male patient diagnosed with familial idiopathic pulmonary fibrosis since 2009, who underwent lung transplantation. He presented progressive dyspnea, dizziness and headache during exercise. Histopathological examination confirmed the diagnosis. The aforementioned criterium was met, because patient's brother was also diagnosed with the same form of IPF during similar period of time in his life. Due to ineffectiveness of pharmacological treatment and end-stage respiratory failure, patient was qualified for lung transplantation with FEV1% result of 30% and FVC% value of 25%. In 2011, he underwent single right lung transplantation. So far, his posttransplant period was complicated with episodes of acute rejection, acute liver failure as well as bacterial and viral infections. Patient was also subjected to multiple bronchoplasty procedures including balloon angioplasty and argon treatment due to bronchoconstriction. Currently, 6,5 years after transplantation the patient is alive and well.

Due to its idiopathic nature, described disease cannot be treated causally. At the beginning, pharmacotherapy is the treatment of choice, but once it stops being effective lung transplantation should be considered, as patients with IPF can benefit from this procedure.

**Keywords: Idiopathic pulmonary fibrosis**

## **Gonadal tumor in 46, XY phenotypic female: a case report**

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Disorders of sex development (DSD) become one of the most complicated diagnostic and therapeutic problem. Patients with DSD, especially with presence of part of the Y chromosome, are known to have an increased risk of developing germ cell tumors. In this cases early recognition based on clinical parameters might be essential in preventing development of tumor.

A 17-year-old, phenotypic female presented with primary amenorrhoea. The secondary sex characteristics were present and gynecological examination was normal. Investigations revealed elevated gonadotrophins (FSH=113 mIU/ml; LH=53.7mIU/ml) with low estradiol (tumors derived from dysgenetic gonads. Clinical management of DSD is currently on debate. In 46, XY females bilateral gonadectomy at diagnosis is proposed. Nonetheless, each specific situation must be individually discussed with each patient and family.

**Keywords: DSD germ cell tumor 46, XY**

## **Adamantinoma - tumor of the distal phalanx of the IV finger of the left hand**

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Adamantinoma is a odontogenic tumor, locally malignant, characterized by a high recurrence tendency. It originates from ameloblasts of the dental lamina, enamel organ, Malassez epithelial islands and follicular cyst's epithelium. Slow, long-term growth is one of adamantinoma's features. Adamantoblastoma can most often be diagnosed among people between 20 and 50 years old. In a radiological image, the adamantinoma is a single-chamber tumor or a multi-chamber tumor that can imitate "honeycomb" or soap bubbles. It is necessary to perform a histopathological examination of it in order to establish a correct diagnosis.

A 23-year-old patient admitted to the Wojewódzki Szpital Specjalistyczny nr. 5 im. Św. Barbary w Sosnowcu due to intensifying pain of the distal phalanx of the IV finger of the left hand for 3 years. The patient did not report any previous injury. A significant enlargement of the outline of the distal phalanx of the IV finger of the left hand was observed. Movement, vascularity and innervation of the hands were correct. During the physical examination patient reported pain around the nail plate. A curettage of the tumor of the distal phalanx of the IV finger of the left hand and a replenishment of the defect with bone graft taken from the radius bone were performed. Specimens for histopathological examination were taken, the result of which was defined as adamantinoma.

Adamantinoma can occur outside the bones building chewing apparatus. Aching, atraumatic changes in the bone should be subjected to wider diagnostics, histopathological examination in particular.

**Keywords: Adamantinoma, tumour**



## **Gastrointestinal stromal tumour (GIST) in a Meckel's diverticulum presented in a 23-year-old patient**

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Meckel's diverticulum (MD) is a congenital defect of the gastrointestinal (GI) tract occurring in approximately 2% of the population. Tumours of the MD are uncommon and observed in 0.5% – 3.2% of cases. Of these tumours, 12% are gastrointestinal stromal tumours (GISTs). Of all complications reported in a MD, haemorrhaging accounts for only 11.8%. This paper presents the case report of GIST causing GI tract haemorrhage.

A 23-year-old man presented with a subsequent episode of GI bleeding manifesting by melena and anaemia. Physical examination revealed tenderness of the RIF medially without peritoneal signs. In history, the patient reported 3 previous episodes of GI bleeding that resolved spontaneously, and underwent several diagnostic tests: double-balloon enteroscopy, capsule endoscopy, Meckel's scan, and after admission to the clinic: gastroscopy, abdominal x-ray, abdominal ultrasounds, CT angiography, which detected no significant abnormalities. An exploratory laparoscopy was done. The inspection of small intestine revealed Meckel's diverticulum situated 50 cm from the ileocecal valve. MD was removed using a GIA stapler. Histopathological examination revealed an ectopic gastric tissue and an adherent GIST involving the entire wall of the small intestine, 4cm width within the MD. AFIP I prognostic group was estimated. The patient was discharged in a general good condition.

GIST of the MD is a rare disease, MD tumours should be taken into account during the differential diagnosis of obscure gastrointestinal bleeding, preoperative diagnosis using standard diagnostic procedures may be impossible, in this case surgery is considered the standard treatment and, based on AFIP, the prognosis is very good.

**Keywords: tumour, Meckel's diverticulum, gastrointestinal bleeding, gastrointestinal stromal tumour, GIST**

## **Achondroplasia - treatment methods of growth deficiency, 15 yo child case.**

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Osteochondrodysplasia is a group of heterogenous systemical malfunctions consisting of growth disorders same as bone and cartilage development. The most common is achondroplasia which belongs to the group of short limb dysplasia. It's monogenic disease, autosomal inheritance but in 80% it shows up de novo. Mutation occurs in FGFR3. Defect caused by mutation leads to endochondral ossification problems which is clinically presented as bone shortness. Patients suffers the most because of: dysmorphic spine, limbs and growth deficiency. Unlike the other skeletal dysplasia in achondroplasia it's possible to surgically distract the bones even for 30cm. New treatment methods allows to avoid complications as angular deformations, joint stiffness and fractures.

**Aim:** To present possibilities and complexity of the growth disorders and other skeletal malfunctions treatment process. Therapy risk assesment.

15 yo boy suffering from achondroplasia with notable growth deficiency, patient of our clinic from 10 years. He's after cross bone elongation of lower limbs and both humerus with different methods.

**Results:** Significant correction of the limbs length and angular deformations.

Nowadays distraction osteogenesis methods gives spectacular results with minimal rate of complications. Patients motivation to start the treatment comes from the possibility of mobility improvement as well as psychological and cosmetic aspect, overall – improved functioning in society.

**Keywords:** achondroplasia, bone shortness, Ilizarov apparatus, growth deficiency

## Platinum-resistant ovarian clear cell carcinoma – case report

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Ovarian clear cell carcinoma (OCCC) stands for 5% of cases of ovarian cancer. Nullipara and endometriosis may increase risk of OCCC. This rare type of ovarian cancer has a poor prognosis due to platinum resistance.

70-year-old patient was admitted to the gynaecological department because of abdominal pain and adnexal cyst. The level of Ca-125 was 114 U/ml at this time. She has never been pregnant. She was qualified for cytoreductive surgery with a total abdominal hysterectomy, bilateral salpingoophorectomy, omentectomy and lymphadenectomy. Histopathological examination revealed clear-cell carcinoma of the ovary and foci of endometriosis. The stage according to FIGO was assessed as II B. According to the National Comprehensive Cancer Network recommendation, first line of chemotherapy comprised of six cycles of carboplatin and paclitaxel every 21 days. One year later, because of progression of the disease, patient underwent second line of chemotherapy based on gemcitabine and carboplatin. The next line of chemotherapy (doxorubicin) was managed 4 months later. After 3 months the patient was admitted because of elevated level of creatinine and bilateral hydronephrosis as a result of infiltration of neoplasm. Nephrostomy was performed and the 4th line of chemotherapy based on etoposide had begun. During the 8th cycle patient presented left limb muscle weakness. Diagnostic imaging revealed stroke. Patient was disqualified from chemotherapy and transferred to the neurological department.

OCCC has worse response to chemotherapy and high carboplatin resistance. After chemotherapy complications may appear, which decrease quality of life.

**Keywords: ovarian clear cell carcinoma**

## **Technical difficulties during transcatheter aortic valve implantation (TAVI) of EvolutR 34 prosthesis in patient with aortic stenosis (AS) and bicuspid aortic valve (BiAV) with very large annulus**

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Recently new size of repositionable valve, EvolutR 34, was introduced to clinical practice. The valve is implanted in aortic valve with 26-30mm diameter of annulus. We present a case report of patient with BiAV with 35mm diameter of annulus, whom we implanted EvolutR 34, procedural dilemmas and potential complications.

80 years old patient with severe symptomatic AS with many comorbidities, with very high operational risk. The ECHO findings showed ejection fraction 28%, BiAV type 1, aortic valve area 0,7 , mean tranvalvular gradient 38mmHg. Patient was disqualified from surgery. During TAVI there was a risk of valve displacement, occurrence of severe aortic regurgitation after balloon valvuloplasty (BAV) and deformation of implanted prosthesis, what might hinder the evacuation of delivering system. Finally, after consultation with proctor, patient was qualified for TAVI. In 2017 patient received the EvolutR 34. Due to morphology of valve heart team withdrawn from BAV. After implantation EvolutR was deformed by native valve what caused resistance during evacuation of delivering system. Due to risk of displacement of valve there was performed a BAV, what enabled evacuation of delivering system. Proper shape of valve was obtained.

With beneficial morphology of BiAV it is possible to implant EvolutR 34, when the annulus diameter is larger than recommended size. A cautious selection of patient should include diameter of annulus and morphology of valve. Heart Teams should take into account the possibility of valve deformation, difficulties with evacuation of delivering system and paravalvular leak after implantation.

**Keywords: TAVI, BiAV, BAV, AS**

## **First case of Lung transplantation after ex vivo lung perfusion in Poland – 1-year follow-up**

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Due to donor shortage, the number of donated lung is not sufficient. New technologies, that has the potential of conditioning lungs previously unsuitable for transplantation have emerged. One of them is ex-vivo lung perfusion.

Case describes a 53-year-old male patient, who became lung transplant recipient due to Chronic obstructive pulmonary disease. Prior to the transplantation, donor lungs were conditioned by ex-vivo lung perfusion. Ventilation parameters and gasometry obtained after couple of hours of such treatment qualified perfused lungs to become a graft. Total time of the ischemia for left lung was 915 minutes and 795 minutes for the right lung. At qualification patients' arterial blood gas test revealed significant hypoxia with hypercapnia with O<sub>2</sub> saturation of 54% during oxygen therapy. 12 months after transplantation, patient is alive and well. His spirometry results are satisfactory and he does not present any symptoms from respiratory system.

Ex-vivo lung perfusion is a technology that can improve the donor lungs quality, thus same a patient with severe respiratory failure.

**Keywords: Ex vivo lung perfusion lung transplantation**

## **28-year-old woman with multiorgan injury occurred in traffic accident**

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Multiorgan injury occurs when at least two topographically different parts of the body have been injured. The most important for the survival of the patient after the injury is correct treatment during the first few hours after the incident.

A 28-year-old woman suffered a multi-organ injury in a traffic accident. The patient had been refused treatment in several hospitals before she was admitted at the Hospital in Piekary Śląskie. There had been diagnosed the rupture of the left diaphragm then the patient was transported to the Provincial Specialist Hospital No. 5 for them. St. Barbara in Sosnowiec. The patient was admitted in a critical condition, with acute respiratory failure, spinal, limbs and abdominal organs injuries. Implemented orthopedic treatment included immobilisation the left humerus with orthopedic cast, decompression of the spinal canal and stabilization of the thoracic spine at the level of Th11-L2. After stabilization of the patient's condition, the procedure of closed left humerus repositioning and fracture fixation with an intramedullary rod were performed. In the course of further hospitalization the patient received a comprehensive rehabilitation, obtaining an improvement in the general condition.

Treatment of polytraumas is time consuming, expensive and involve teams composed of specialists in various fields of medicine. If definitive treatment is not possible in a given medical center, the patient should be transported safely to another place.

**Keywords: polytrauma, multiorgan injury, spinal injury**

## **Life-threatening stenosis of the pulmonary arteries in mediastinal lymphoma - an innovative method of treatment with the use of stents**

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A 23-year-old woman reported to the hospital after returning from vacation due to malaise, shortness of breath and generalized swelling. In the interview - unclear backache probably related to work. At the city hospital during the echocardiogram a large amount of free fluid in the pericardial sac was found and 600 ml was drained. The patient was transferred to the provincial hospital. There was performed the diagnosis of pulmonary embolism (angio-CT), stating the presence within the mediastinum of a tumor narrowing critically pulmonary arteries. Then the patient was transferred to the Thoracic Surgery Department. A few hours later occurred symptoms of profound shock, anuria, and disturbances of consciousness. The patient was intubated and transferred to the ICU SCCS.

Despite the infusions of catecholamines, traits of shock were maintained. Laboratory tests showed profound acidosis, very high transaminase and INR values as well as features of DIC. In imaging studies were visualized fluid in both pleural cavities and in the peritoneal cavity. In view of the exhaustion of the current forms of therapy and the persistence of immediate life threatening, after the consultation, the decision was made to extend the pulmonary arteries by inserting stents to the left and right pulmonary artery (ultimately only to the right; the left artery extended similar to coronary arteries - PCI).

After surgery a general improvement was achieved and in the following days, respiratory and circulatory improvement. The diagnosis was continued, obtaining confirmation of lymphoma. After 30 days of ICU treatment, the patient was referred to the oncological center.

**Keywords: lymphoma, pulmonary arteries, stenting, critical care**

## **Unsuccessful teenage suicide attempt resulting in a major trauma of the right upper limb**

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A 16-year-old girl attempted to commit suicide after taking benzodiazepines- she threw herself under the coming train what resulted in a crush injury of the right upper limb and the maxillofacial trauma. The patient was transported to the Department of General and Vascular Surgery in Katowice-Ochojec, where the wound was revised, the vascular bridge between brachial and ulnar artery was developed, an external stabilizer for the comminuted fracture of the humerus was given and the fasciotomy of the forearm was performed. There was an acute respiratory failure caused by the hypovolemic shock during the stay in the Department on the 2nd day of the treatment. Once the patient had been stabilized, she was transferred to the Department of the Pediatric Surgery in Katowice-Ligota, where she was diagnosed with major trauma of the right upper limb including comminuted fracture of the humerus, extensive skin loss and muscular injuries on the anterior and lateral part of the arm and the forearm, damage of the median and the ulnar nerves, complete interruption of the radial artery and partial damage of the brachial artery with a cylindrical aneurysm. A lot of necrotic tissue was noticed. The fingers were swollen and cool. No active movements in all joints of the right upper limb were present. Microbiological cultures obtained from the wound revealed the presence of the *A. baumannii* and *E. faecium*.

The presented case required multi-center cooperation of the specialists. The rehabilitation, that lasted many months, allowed a considerable return of the hand's function. However, thanks to the use of vacuum therapy and hyperbaric chamber, amputation of patient's limb was avoided.

**Keywords: Vaccum therapy, hyperbaric chamber, major trauma, teenage suicide attempts**



## **Coexisting of intrathoracic displacement of the humeral head and proximal humerus fracture. Case report**

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Intrathoracic displacement of the humeral head is an extremely rare complication of severely high energy trauma. Proximal humeral fractures are the third most common fracture. This type of fracture is often caused by fall with the arm adducted or abducted.

49-old patient was admitted to the Department and Clinic of Thoracic Surgery in Zabrze, directed from Orthopaedic Trauma Surgery Department in Blachownia. The CT-scans revealed: left-side comminuted fracture of proximal humerus with displacement of a fractured humeral head which migrated to the left pleural cavity; left-sided(2-5)rib fractures with significant displacement of the fragments of third and fourth rib; subcutaneous emphysema of the chest wall and the neck. Anterolateral thoracotomy was performed. Desquamated head of humerus and hematoma were removed from left pleural cavity. Hematoma of superior mediastinum was observed. Protruded rib fragments were removed. Damaged pleura was sutured and orifice in chest wall was partly closed. Drainage of left pleural cavity. On CT-angiography damage of the left axillary artery and left subclavian artery was excluded. On 3th postoperative day, patient in stable condition was discharged to Hospital in Blachownia where the treatment was continued.

Coexisting of intrathoracic displacement of the humeral head and proximal humerus fracture is extremely rare. Because of the limited number of cases, appropriate treatment modality remains individual. Intrathoracic displacement of the humeral head can cause hemothorax, pneumothorax and damage of thoracic arteries, therefore control tests such as CT-angiography should be performed.

**Keywords: intrathoracic displacement of the humeral head, proximal humerus fracture, hemothorax, pneumothorax**

## **Dangerous pedestrian crossing – case report of 54 yo with polytrauma after car accident**

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Nowadays because of the technological and social development polytrauma is not encountered in military medicine only. Rising car number means higher crash frequency. According to the newest statistics 40% of casualties are the unprotected people (25 % are pedestrians ) who cannot count on airbags and seatbelts. Accident probability is determined by few factors including speed, alcohol and drugs usage, even day or hour. No protection means severe and often life-threatening conditions.

**Aim:** To analyze and show proper emergency and surgical treatment of the pedestrian with polytrauma after car accident.

54 yo women with many limb injuries and internal traumas. Based on medical records and imaging. Patient assessed in Injury Severity Score and World Society of Emergency Surgery classification

Professional actions on scene, stabilization of the patient condition and proper quick diagnostics in Emergency Department allows to implement surgical orthopaedics procedures. At the moment patient is during further treatment and recovery.

Patients suffering from polytrauma should be treated in multidisciplinary hospital centers with high experience with this type of condition, where possibility of proper imaging and appropriate way of proceeding does exist. Proper and fast actions gives us a chance to reduce permanent disabilities and allows recover health quickly.

**Keywords:** Polytrauma; Emergency; Orthopaedics; Trauma surgery; Car accident; Pelvic injuries;

## **Pulmonary veno-occlusive disease as a rare form of pulmonary hypertension treated with lung transplantation - a case report**

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Pulmonary veno-occlusive disease (PVOD) is a very rare condition with estimated occurrence of 0,1-0,2 cases per million people. PVOD is consist with progressive occlusion of small lung veins, what causes increased pulmonary resistance and right ventricle dysfunction. Lung transplantation is a viable therapeutic option for patients with this end-stage lung disease.

24 y.o. male patient with PVOD diagnosed in 2016. In 2012, patient was admitted to the hospital due to mononucleosis and atypical pneumonia. Since then, he suffered from progressive respiratory insufficiency. Medical imaging results were distinctive for pulmonary hypertension and lead to the suspicion of PVOD. Patient was also diagnosed towards connective tissue disorders because of the positive anti-nuclear antibody (ANA) results. Applied pulmonary hypertension (PH) treatment (calcium channel blocker, loop diuretics, sildenafil, bosentan and trepostinil) wasn't effective. In 2017 genetic testing results confirmed PVOD, however they did not allow to determine the familial impact. The decision to treat the patient with trepostinil in doses exceeding the norms for PH treatment was made and good results were achieved. Patient was qualified for lung transplantation (LT) in Silesian Center for Heart Diseases. LT was performed in 2017. 9 months after LT the patient is alive and well. Current graft function is satisfactory.

PVOD is classified as a subgroup of PAH, in which it is difficult to achieve therapeutic effect with standard IPAH medications. Lung transplantation was an efficient treatment that lengthened and improved patient's life.

**Keywords: PVOD, pulmonary hypertension, lung transplantation**

## **Ovarian cancer during pregnancy – case study**

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Neoplasm diseases is the second leading cause of death of woman in reproductive age, complicating up 0,02 % to 0,1 % of pregnancy. This incidence is expected to rise with the increase in age of childbearing. Malignant ovarian neoplasm diagnosed during pregnancy, at advanced stages, are very rare.

In our case, we describe our management of 38-years-old woman diagnosed with FIGO 4B ovarian cancer at 30 weeks of gestation. MRI study revealed numerous tuberos masses, which were also detected during the operation. In 32 week of pregnancy patient undergone C-section and tumor removal operation. The surgery contain of a hysterectomy, bilateral salpingoopharectomy, omentectomy, pelvic and paraaortic lymphadenectomy, peritonectomy. Sigmoid colon and rectum were resected together with tumor-infiltration. A protective stoma was created for descending colon. Metastasis were detected in myometrium, colorectal adipose tissue and lymph nodes. Histopathology study confirmed low grade papillary serous cancer.

In our case surgery was chosen without primary induction chemotherapy, due to gestational age (30 week gestation). If we started chemotherapy, which includes 3 cycles (9 weeks) and 3 weeks break before delivery, the patient would reach the 42 week of pregnancy. That would be dangerous, for both the mother and the child. Patient was discharged from hospital 14 days after surgery in relatively good condition.

## **Cardiac surgery treatment of right subclavian artery pseudoaneurysm in 11 years old patient after traffic collision**

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Work's tutor: lek. Grzegorz Zalewski

Pseudoaneurysm is a result of blood collection under adventitia after an injury of artery.

11 years old patient was admitted to Intensive Care Unit (ICU) with respiratory failure, severe craniocerebral trauma and right clavicle fracture after a traffic collision. The clavicle was juncted by 2 Kirschner wires in 9th day of hospitalization. Due to improvement of patient's clinical condition, he was transferred to Neurology Ward to continue therapy. 13 days after clavicle junction, Kirschner wires were removed. 20 days later the tumor in right supraclavicular region was observed. Angio-CT showed presence of pseudoaneurysm of right subclavian artery. Due to high risk of pseudoaneurysm perforation patient was disqualified from endovascular and surgical treatment in 3 vascular surgery centers. Of this reason, patient was qualified to cardiac surgery treatment.

In access by median sternotomy and supraclavicular incision, with cardio-pulmonary bypass, in moderate hypothermia the pseudoaneurysm was opened. The internal material of pseudoaneurysm was removed, and 3x5 mm sized aperture in subclavian artery was found and closed. There were not complications during postoperative treatment. Patient spent 1 day in post-operating room and returned to rehabilitation in a short period of time.

Long-term observation showed correct perfusion in the right upper limb. The control CT examination showed no features of subclavian artery stenosis.

Patients with pseudoaneurysms of subclavian arteries can be successfully treated with cardiac surgery, especially patients with high risk of other treatment failure

**Keywords: Keywords: pseudoaneurysm, cardiac surgery, subclavian artery**

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**INTERNATIONAL MEDICAL CONGRESS OF SILESIA**

# **SESSION OF CASE REPORTS INTERVENTIONAL II**

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## **A case of patient with endometriosis in the scar after caesarian section surgically treated with the use of Plasma Technology**

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Endometriosis is defined as the occurrence of active endometrial tissue outside of physiological location- uterine cavity. It is estimated that even 15 % of all women suffer from endometriosis, mostly at reproductive age. Endometriosis is often a cause of severe pain and infertility. A therapy involves: pharmacological treatment, surgical treatment or a combination of these two therapies. Plasma Knife is one of the most innovative technologies used in the gynaecological surgery.

We present a case of 28-year -old patient admitted to the Center of Woman's and Child's Health in Zabrze in order to undergo a surgical treatment of endometriosis in the scar after caesarian section. She was surgically treated with the use of plasma technology. The diameter of endometriosis was 4 cm and it was located in the subcutaneous fat tissue, reaching the peritoneum, but not infiltrating it. The duration of the operation was 1 hour and the patient was released from the hospital 2 days after the surgery. The patient will remain under the control of Gynaecology Department.

Plasma technology is a method that allows a surgeon to perform no-touch, safe and atraumatic surgery. It is often a solution for patients suffering from endometriosis for many years, without any amelioration after pharmacological treatment. An observation of patients suffering from endometriosis surgically treated with plasma gives us information that a re-operation wasn't needed in any case and there was no re-occurrence of endometriosis in any of the patients. Currently, the Center of Woman's and Child's Health in Zabrze is the only unit in Poland treating patients with endometriosis with the use of plasma knife.

**Keywords: endometriosis, plasma knife, plasma technology, cesarian section**



## **Internal hernia - a “trapped” small intestine loop in the sigmoid mesentery**

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Internal hernia diagnosed in 43-year-old woman hospitalized in the Clinic of General and Oncological Surgery of the Pomeranian Medical University in Szczecin. The aim of the work is to present a clinical case. A retrospective analysis of the patient's medical records was performed.

The 43-year-old patient was regularly hospitalized in the Department of General and Oncological Surgery due to obstruction and suspicion of intussusception. She complained of abdominal pain for 10 days. They appeared originally after the occurrence of dietary error. Radiological diagnostics were performed: in the ultrasound examination of the abdominal cavity - visualization of a section of the loop of the small intestine curved into the mesenteric tissue of the large intestine (2.5 cm). The patient was qualified for surgical treatment.

The patient was treated laparoscopically - a small intestine loop trapped in the mesentery of the sigmoid was released. Written home on the 4th day after surgery in good general condition.

**Keywords: Hernia, Surgery**

## **Oesophageal atresia and CHARGE syndrome – what do they have in common?**

### **Case report**

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Charge syndrom (CS) is very rare genetic disorder and occurs in approximately 1 in 8.500 to 10.000 newborns. It affects many areas of the body and requires multidisciplinary cooperation.

The aim of this study was to present case with a rare CS. The medical history of child born in 2016 and then treated in the Department of Children's Developmental Defects Surgery and Traumatology in Zabrze due to oesophageal atresia (OA) was analyzed retrospectively.

The infant presented the CS manifestations such as colombla of the right eye (C); nasal choanal stenosis (A); genitourinary disorders (G)–micropenis, one testicle in the scrotal sac; ear abnormality (E)–thickened ear helix.No other disorders characteristic for CS were diagnosed. In echocardiography no heart diseases (H) except patent ductus arteriosus were found.The infant did not also present any symptoms of retardation of growth and development yet (R).Beside abovementioned abnormalities infant had gothic palate with upper jaws' alveoloschisis. The right-sided thoracotomy was conducted on the second day of his life.Tracheoesophageal fistula was ligated and end to end anostomosis of the oesophagus on probe were performed.The infant was extubated on the 6th day after surgery.Patient did not present any postoperative compliactions except fever and was discharged after 32 days of hospitalization.

OA occurs at 10-17% of children with CS. The infant was firstly diagnosed with OA as he presented typical symptoms but due to watchful doctors and quick diagnosis the multidisciplinary care was applied as soon as the abnormalities were reavealed. It enabled to implement quick treatment and reduce the likelihood of complications.

**Keywords: oesophageal atresia, Charge syndrom, thoracotomy, congenital malformation**

## Postpartum hemorrhage due to undetected factor XI deficiency – case report

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Postpartum hemorrhage remains the most common cause of maternal deaths worldwide and results from different conditions including coagulation abnormalities. Factor XI deficiency (hemophilia C) is a rare type of congenital bleeding disorder. The symptoms typically occur after trauma or surgery whereas spontaneous bleeding is uncommon.

A 25-year-old woman in the 28th week of the second pregnancy was admitted to Department of Obstetrics and Perinatology because of preterm premature rupture of membranes. On the 40th day of hospitalization regular uterine contractions were noted and the patient was qualified to emergency cesarean section. No complications occurred during the operation. A newborn obtained 5-minute Apgar score of 8. The day after cesarean section, deterioration of mother's condition occurred. Examination results suggested acute bleeding into peritoneal cavity. Due to hemorrhagic shock in progress relaparotomy was performed and few suspected places of bleeding were stemmed. During the operation and further hospital stay six units of red cell concentrate were transfused. Due to development of respiratory failure, the patient was transferred to Intensive Care Unit. Meanwhile, hematological examination and specific laboratory tests confirmed factor XI deficiency and diagnosis of hemophilia C. On the 52nd day the patient left the hospital in good condition.

Hemophilia C may cause excessive life-threatening bleeding. Identification of patients with severe factor XI deficiency prior to surgery is crucial to initiate following adequate approach and avoid potential complications such as postpartum hemorrhage.

**Keywords:** postpartum hemorrhage, factor XI deficiency, hemophilia C

## **Diode laser as an alternative to a monopolar knife in intrauterine myelomeningocele repair**

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Myelomeningocele (MMC) is a severe, congenital defect of central nervous system. In 90% of cases it is associated with Chiari malformation II (CM II), hydrocephalus (HC), bowel and bladder control problems, lower limbs motor dysfunction. Intrauterine myelomeningocele repair (IUMR) has a proven neuro-protective effect, however it is also associated with preterm premature rupture of membranes (pPROM) and prematurity. Therefore it is important to look for method alternations which will lower adverse side effects.

Case description In 2017 the Fetal surgery team of Department of Gynecology, Obstetrics and Gynecologic Oncology in Bytom, performed probably the first in the world OFS with the use of diode laser (DL). Patients were qualified for operation according to the Management of myelomeningocele study (MOMS) criteria. Patient aged 29 in second pregnancy, after single cesarean section. MMC localized in L3-L4 segment, CM II, karyotype 46 XX. Patients were operated at 25w0d. Myometrium, membrane opening and MMC repair was done by DL. Results Patient was delivered at 36w2d due to pPROM. Newborn delivered with cesarean section, 2400 grams / 50 cm with apgar score 10/10. Duration of pregnancy with DL was 13 days longer than average duration of pregnancy for Department, which is 34w1d. Blood loss DL vs MK (in ml) maternal 60 vs 120, fetal 8 vs 12.

Use of DL vs MK provides better hemostatic effect without wide tissue coagulation DL prolonged duration of pregnancy by 13 days Early effects of DL use in OFS are encouraging but requires further trials

**Keywords: diode laser ,myelomeningocele, open fetal surgery**

## **The successful use of Extracorporeal Membrane Oxygenation (ECMO) for the treatment of the acute respiratory failure in Legionella Pneumonia**

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Veno-venous extracorporeal membrane oxygenation (ECMO) is one of the possible options used in patients with acute respiratory distress syndrome (ARDS) due to the potential reversible illness. The use of ECMO may be a method for reducing mortality in ARDS.

The man was admitted to the ICU with ARDS due to legionella pneumonia. V-V ECMO therapy was included. During the therapy the most common complications occurred: bleeding and infection. In the following days, the ARDS covered the whole field of the lungs. Pneumothorax was formed with a hematoma. A toracotomy with removal of the VI rib was made. In the next day after a surgery, a massive bleeding occurred. In the following days, stabilization of bleeding and improvement of gas exchange were obtained. To assess the effectiveness of the treatment, CT was performed, in which the fluid in a pericardial sac was detected. In urgent mode, the tamponade was delivered. The consequence of the closed drain was the formation of a blood reservoir in the right-hand subscapular area, which was the source and focus of *Candida albicans*. After hematoma evacuation and antifungal treatment, improvement was achieved. On the 35th day of the therapy, as a result of the improvement in gas exchange, ECMO was disconnected. The consequence of the prolonged therapy was the critically ill polyneuropathy, which was intensively treated on the ward. After 99 days of ICU stay, the patient was transferred to the rehabilitation department.

ECMO is a very invasive therapy that gives the chance to save the life of patients with ARDS. It requires experience and the right skills to lead. Further evaluation requires the assessment of the lung regeneration possibility and the remote effects of the treatment.

**Keywords: ECMO, ARDS, Veno-venous extracorporeal membrane oxygenation**

## Primary diagnosis of metastatic breast cancer in pregnancy

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Breast tumor is the most frequently diagnosed carcinoma among Polish women. Although cancers in pregnancy are rare, still up to 0.1% of all gestations are complicated with malignant neoplasm.

40-year-old woman in the 11th week of her first pregnancy was admitted to University Hospital due to a mass in her right breast involving nearly whole mammary gland. Core needle biopsy (CNB) was performed and, on the basis of histopathological examination, the patient was diagnosed with invasive carcinoma of no special type. During her stay at hospital, a woman complained about pain in lumbosacral region of the spine, which, according to the patient, began in the 5th week of pregnancy. MRI revealed metastases from Th10 to S5 and in wings of ilia. Patient decided to continue pregnancy. On the 13th week of gestation, the patient started chemotherapy in accordance with BRAVTAX protocol for palliative therapy of metastatic breast cancer (Taxol 80), with reduced doses of the cytostatic (142.4 mg). She underwent 2 cycles of chemotherapy. Monitoring of fetus well-being was performed repeatedly during the treatment. In 20th week of gestation gravida obsolete was diagnosed. After misabortion the woman continued chemotherapy and started radiotherapy of lumbar and cervical regions of the spine. Patient still continues chemotherapy.

The case highlights the importance of complete physical examination, including examination of breasts. Physicians have to bear in mind that, although cancer rate in pregnancy is not very high, diagnosis of neoplasm in a pregnant woman might have serious consequences not only for a woman but also for a child.

**Keywords: breast cancer, pregnancy, metastatic neoplasm, chemotherapy**

## An ovarian Leydig cell tumor- a case report of two women

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Leydig cell ovarian tumour is a rare gonadal tumour which constitutes about 7% of ovarian tumours. In the majority of cases (70 - 85%), the growth is accompanied by androgen secretion, together with virilisation and hirsutism.

1) A 61-year old female patient was admitted to the Clinic with symptoms of hirsutism for treatment of the virilising tumour of the left ovary. The patient reported rare pains around the abdomen, frequent urination, and a deeper voice lasting for two years. Testosterone level :769 ng/dl and DHEA-S level: 225 ug/dl. The patient underwent hysterectomy with removal of adnexa on both sides. The histopathologic examination revealed a Leydig cell tumor of the left ovary.

2) A 60-year old female patient was admitted to the Clinic with symptoms of virilisation for treatment of the tumour of the left ovary. Hirsutism was accompanied by a gradually deeper voice, shrinking breast glands and male type of alopecia. 2 years ago, she started to lose hair around the temples and gained around 20 kg. The level of testosterone was: 1.75 ng/ml and of DHEA-S : 249.5 ug/dl. The patient underwent laparotomy with supracervical removal of the uterine body and both ovaries. The histopathologic examination revealed a Leydig cell ovarian tumor.

Leydig cell ovarian tumors are not only a medical problem but also a social problem – that is why women with symptoms of hirsutism relatively quickly contact physicians for medical consultation. Thanks to this, 90% of the cases is detected at stage I of neoplasms progression according to the FIGO staging system.

**Keywords: hormonally active ovarian tumors, steroid hormones, virilisation, hirsutism**

## Teratoma of the liver hilum – case report

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Teratoma is a tumor consisting tissues derived from more than one germ layer. 80% teratomas are localized in sacral region, 10% in sex glands, 3-5% in neck, retroperitoneal and eye region. Liver and hepatic hilum is rare localization of teratomas.

Female newborn from 3rd pregnancy (3rd labor), born in +/- 41 gestation week (gw), with 3950g birth weight, Apgar score -10. Prenatal ultrasound examination performed in 35gw revealed cystic lesion with calcification localized under the liver (45x37mm). Lesion was described as irregular, well-defined and hyperechogenic. Postnatal USG revealed well-defined but lumpy cystic lesion localized between lower margin of the liver, anterior abdominal wall and the stomach, measuring 57x45x40mm. Inside the lesion, on its medial wall, heterogeneous structure measuring 38x24x21mm was described. No more imaging examinations were performed due to patients age and USG gratifying results. Laparoscopic surgery was scheduled. During the procedure well-defined and easy to separate from the surrounding tissues, big cystic tumor arising from hepato-doudenal ligament was found. Tumor was separated from other tissues and removed inside the surgical bag from the abdominal cavity through additional incision made in the lower abdomen (Pfannenstiel incision). Histopathological examination confirmed the diagnosis: teratoma of the hepatic hilum. Patient was discharged from the hospital in good shape. She is under pediatric surgery clinic control.

Hepatic hilum is extreme rare localization of a teratoma. Treatment of choice in those cases is radical surgery. Laparoscopy is an efficient surgical method that can be successfully used in those cases.

**Keywords: Hepatic hilum teratoma liver laparoscopy**



## **Central Giant Cell Lesion in 24-year old woman with postoperative complications – a case report**

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Central Giant Cell Lesion (CGCL) is rarely found, histologically benign, proliferating lesion, clinically often locally aggressive. Typically is located in mandible and affects people in 2 and 3 decade. Operation remains referenced treatment and its type depends on clinical signs. The aim was to present the process and results of treatment of aggressive CGCL complicated with partial flat necrosis.

24-year old woman admitted to the Maxillo-Facial Surgery Clinic with swelling of right mandible, enlarging for months, and disturbances of skin sensation. Physical examination revealed facial asymmetry and tumor in right submental area. CT scan showed solid lesion with irregular margin in submental region, filled with enhanced nodulated masses and pathological vessels. Patient was qualified to radical operation. Partial resection of mandible from 37 to 45 tooth, skin and mucosa from submental region was performed. The cavity was reconstructed by microvascular flap from right fibula with cutaneous island and closed by advanced flap. In the next days disfunction of venous drain in microvascular lobe and following necrosis led to revision and removal of improper fragment. SIRS and pneumonia was noticed postoperatively. Patient underwent 4 sessions of hyperbaric coupling, after few days encouraging to move with ulnar crutches. Eventually discharged in good condition. After two years there wasn't any recurrences and other adverse events. Lower lip presents loss of sensation.

In present state of knowledge operation remains the best option to cure those types of lesions, but adverse healing process connected with personal predisposition should be considered.

**Keywords: Central Giant Cell Lesion, mandible, reconstructive surgery**

## Postradiation imaging challenges in glioblastoma patients: a case report

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Glioblastoma is a very aggressive brain tumor, which is usually treated with surgery, followed by radiochemotherapy. In most cases, this disease recurs within one year of primary treatment and radiologic differentiation between radiation-induced necrosis and tumor progression is challenging.

A 54-year-old male presented to the emergency department complaining of severe headaches, which started one week ago when patient experienced fainting episode. Magnetic resonance imaging (MRI) of the head showed a homogeneous extra-axial mass within the left occipital lobe, suggesting a meningioma. A watchful waiting strategy was recommended and 5 months later MRI of the head was repeated. It demonstrated a cystic components containing mass, which was enlarged by two times compared to previous images. The patient was referred to neurosurgical center and craniotomy with tumor resection was performed. The microscopic examination of the resected tissues confirmed diffuse astrocytoma (grade II). Later reoperation was required and histopathology of the residual masses was consistent with glioblastoma (grade IV). Two months after the patient finished radiochemotherapy, brain MRI scan showed contrast enhancement of the surgical bed margins, which was differentiated between radiation-induced necrosis and tumor progression, but more detailed perfusion MRI was not obtainable because of technical problems. Two months later huge neoplastic masses were revealed by MRI scan.

MRI is crucial for the follow up of glioblastoma patients and multiple functional imaging methods should be used in distinguishing treatment necrosis from tumor progression.

**Keywords:** Glioblastoma, magnetic resonance imaging, radiation necrosis, tumor progression

## **Tumor of the parapharyngeal space as an example of incidentaloma –a case study**

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Tumors of the parapharyngeal space are rare tumors which comprise about 0,5% of all head and neck neoplasms. They are mainly benign (80%). Mostly large tumors display symptoms. Diagnostic process carried out due to complaints not related to the presence of the tumor may accidentally lead to its discovery (incidentaloma). The most common histological structure is pleomorphic adenoma of salivary gland origin.

59-year-old female patient complained to the otorlaryngologist about the persistent headache, generalized weakness and rhinitis. Sinus X-Ray showed opacification of the left maxillary sinus. CT scan revealed the retention cyst of the sinus and oval, well-demarcated lesion in the left parapharyngeal space, confirmed by MRI scan (dimensions: 39x27x36mm). The patient was admitted to Otolaryngology Clinic with the suspicion of the parapharyngeal space tumor. Physical examination revealed the asymmetry of the oropharynx, protrusion of the palatine tonsil, palpable tumor under the tonsil and no other symptoms. During the surgical treatment the parapharyngeal space was reached via transcervical approach. The tumor was identified and removed entirely together with the sentinel lymph node. The patient was discharged from hospital in good condition with proper function of the facial nerve. Histopathology revealed the pleomorphic adenoma and intact lymph node.

The parapharyngeal space tumors are very rare and mostly benign. There are cases of accidental discoveries (incidentaloma). CT and MRI are required for diagnostics. The most advantageous method of treatment is surgical removal. Still, the presence of important vital structures nearby makes this kind of treatment a challenging procedure.

**Keywords: incidentaloma, parapharyngeal space, pleomorphic adenoma**

## **Consumption of alcohol in pregnancy as a risk factor for maternal and fetal complications**

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Fetal alcohol syndrome (FASD) is a result of the toxic effects of alcohol on the fetus during the prenatal period. Consumption of alcohol in pregnancy is absolutely contraindicated. FASD is a common cause of congenital intellectual disability and is characterized by typical facial dysmorphism.

A pregnant woman in a state of alcohol intoxication and with a long history of alcoholism was admitted to the 1st Chair and Clinic of Obstetrics and Gynecology due to premature leakage of amniotic fluid. The woman did not know about pregnancy. Based on the approximate date of the last menstrual period and ultrasound the gestational age was estimated at 40 weeks with intrauterine growth inhibition. Due to the symptoms of threatening perinatal asphyxia, it was decided to finish the pregnancy by Caesarean Section. A newborn male was born with severe hypotrophy (body weight 1170 g - 0.3 pc) in fair general condition. Characteristic facial features were found. Structural birth defects concerned the cardiac system (atrial septal defect) and urogenital system (right-sided cryptorchidism). The neonatal period was complicated by respiratory disorders and the need for parenteral nutrition due to suspected necrotizing enterocolitis. The patient's mother left the hospital on the second day of the puerperium leaving the child in it.

Fetal alcohol syndrome can cause serious complications of perinatal and neonatal period. The problem of alcoholism is particularly dangerous if it concerns women during the procreative period. In addition to destructive effects on all aspects of life, it can result in serious birth defects in the case of unplanned pregnancy.

**Keywords: Fetal alcohol syndrome, ARDB, alcoholism, neonatal complications, hypotrophy, perinatology**

## **Acquired hemophilia A in the practice of an obstetrician/gynecologist- case report**

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Acquired hemophilia A (AHA) is kind of autoimmune disease in which there are produced neutralized antibodies against VIII clotting factor as a result. It's manifested by heavy plasma diathesis. Our purpose was to describe clinical case of AHA in the patient hospitalized in the gynecology and obstetrics clinic.

Our work is a description of clinical case of patient with undiagnosed AHA and ovarian cyst. She was operated in emergency mode with complications such as bleeding in the lesser pelvic area. Hospitalized in the intensive care ward. After hematological consultation the patient was diagnosed with AHA (APTT 97s, activity factor VIII 1,2%, count of factor VIII inhibitor 5,6jB). A therapy was applied in form of- concentrate of red blood cells and platelets, fresh frozen plasma, cryoprecipitate, recombinant factor VIIa, activated prothrombin complex concentrate witch allowed for normalization of coagulation parameters and improve clinical the patient's condition (APTT 37,6, activity factor VIII 59%, factor VIII inhibitor was not detected). Steroid therapy was applied and she was under the care of hematology clinic.

AHA is a sudden disease and requires quick clinical procedures.

**Keywords: acquired hemophilia A,bleeding, ovarian cyst,factor VIII inhibitor**

## Rare case of iatrogenic damage of brachiocephalic artery – case report

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Multiple trauma is considered as a challenging state for medical team and requires to perform many invasive procedures that can cause potentially risky complications. We distinguish surgical tracheostomy and percutaneous dilatational tracheostomy (PDT). Injuries of brachiocephalic artery (BCA) as a consequence of PDT are very rare (0.35%)

A 52 year old male was admitted to Intensive Care Unit (ICU) in Bytom due to a circulatory and respiratory failure subsequently to multiple trauma. After primary diagnosis a right pleural drainage was set up. As a result of breathing disorders and bleeding from tracheostomy area the patient was transferred to ICU in Zabrze. In admission patient was unconscious, required catecholamines infusion and mechanical ventilation. During a hospitalization a severe bleeding from tracheostomy tube area occurred. Revision of that area revealed a massive tearing of the anterior wall of trachea, damage of BCA and relocalization of tracheostomy tube deep into a mediastinum. Thoracic surgeons team decided to perform a sternotomy and to use dacrone vascular prosthesis. The outcome of the operation was satisfactory and without any complications. Patient was transferred to Thoracic Unit for a rehabilitation and discharged home in good condition.

1. In any case of breathing disorders and bleeding from tracheostomy area BCA damage diagnostic should be considered. 2. Using a dacrone vascular prosthesis in BCA damage is a safe and effective procedure.

**Keywords: multiple trauma, brachiocephalic artery, tracheostomy, vascular prosthesis**

## **Aniridia - is it only the absence of the iris? Analysis of the disease based on the clinical case**

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Aniridia is a rare, typically bilateral defect in iris development caused by mutation of the PAX6 gene located on the short arm of chromosome 11 (11p13). This disorder is not limited to an iris hypoplasia, but is a panocular condition associated with other ocular defects. The aim Analysis of anterior and posterior segments alterations associated with aniridia as well as difficulties in bilateral cataract and aniridia treatment.

64-year-old patient with aniridia was referred urgently to the Department of Ophthalmology of University Clinical Centre in Katowice to undergo cataract surgery. At admission, the visual acuity was 0.5/50 in the right eye and 2.5/50 in the left eye. Results of the diagnostics included anatomical anomalies within the filtration angle, advanced changes in the field of view, high hyperopia, astigmatism, keratopathy and foveal hypoplasia. Results The surgical cataract removal involved a high risk of complications associated with the instability of the suspensory ligaments supporting the lens, the fragility of the front lens capsule and keratopathy hindering insight into the bottom part of the eyeball. After the surgery, visual acuity improved to 5/25 in the right eye and 5/10 in the left eye. Removal of the own lens contributed to the partial stabilisation of intraocular pressure.

Therapy of patients with aniridia is associated with the treatment of several disease entities. It is based on both pharmacological and surgical methods, characterized by high risk of complications and limited improvement of visual acuity after the procedure due to other coexisting intraocular disorders.

**Keywords: aniridia, secondary glaucoma, complicated cataract, keratopathy**

## How to operate safer and quicker? Use of Monopolar Lap Loop in laparoscopic supracervical hysterectomy

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Supracervical hysterectomy is one of the most frequent gynecological surgery performed in Poland. According to the newest medical knowledge, indications for hysterectomy are: uterine or/and ovarian cancer, recurrent uterine bleeding, severe hemorrhagic menstruation with secondary anemia, pain syndromes with different intensity and frequency, etc. The uterus can be removed by laparoscopy in radical way or with the cervix left intact, what is known as laparoscopic supracervical hysterectomy (LSH). Hopes are raised by a new method of LSH using the Lap Loop monopolar electrode for resection and detachment of the uterine corpus from cervix, which is presented in described case.

Patient aged 39 admitted to Center of Woman's and Child's Health in Zabrze due to uterine fibroids, recurrent bleeding and anaemia. Patient after SVD in 1999 and fractional abrasion in 2017. The transvaginal ultrasound revealed uterus in anteflexion with dimensions 66x61mm with smooth contours and inhomogeneous echoes. The endometrium thickness was assessed 22mm. No changes were shown in both sides of the adnexa. Patient was qualified for laparoscopic surgery using the METRA LOOP.

After receiving patient's consent, patient under general anesthesia was subjected to surgery. LSH was performed with bilateral tubectomy using a METRA LOOP. After detachment from the cervix, the uterine corpus was removed with morcellation.

The benefits of laparoscopic supracervical hysterectomy clearly outweigh the risks. An electrosurgical loop has been designed and successfully used to decrease the time required and to facilitate safer, quicker transection of the uterine cervix during LSH for benign uterine conditions.



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# **SESSION OF CASE REPORTS NON-INTERVENTIONAL I**

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## **A case of coexistence of TSH secreting pituitary tumor, Hashimoto thyroiditis and papillary thyroid carcinoma. Challenges in pathogenesis and treatment**

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Coexistence of thyrotropin hormone-secreting pituitary adenoma with differentiated thyroid carcinoma is immensely rare with few cases confirmed. Its clinical presentation and management strategy are demanding. We describe a case of pituitary macroadenoma, with clinical syndromes of hyperthyroidism, and a thyroid nodule, cytologically confirmed to be papillary thyroid carcinoma. We discussed clinical implications, focusing mainly on the plan for proper treatment.

Analysis of the disease's history Patients concern: A 54-year old female was admitted to the hospital in 2016 for hormonally active pituitary macroadenoma treatment monitoring, after 3-months therapy with somatostatin analogs and cabergoline. Thyroid function test showed decreased thyroid hormones and TSH. Furthermore, the levels of prolactin and IGF-1 normalized. Thyroid ultrasound examination displayed diffused goiter. Pituitary MRI examination performed tumor shrinkage. Unexpected, thyroid papillary carcinoma was detected in 2016 in fine needle aspiration biopsy.

TSH-secreting pituitary adenoma, as an unfrequent cause of thyrotoxicosis, should be considered during the differential diagnosis of hyperthyroidism. An exceedingly rare combination of TSH-oma and thyroid papillary carcinoma increases the chance that TSH may be connected with tumorigenesis in the thyroid gland.

**Keywords: thyrotropin hormone-secreting pituitary adenoma**

## **Slow-flow phenomenon in patient with ST-elevation myocardial infarction treated with percutaneous coronary intervention**

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PCI is a standard care for STEMI. However, there is a group of patients who continue to manifest diminished myocardial reperfusion despite successful opening of the obstructed artery. This phenomenon is called "slow -reflow"

A 55-year-old woman with a medical history of STEMI treated with PCI of the right coronary artery (RCA) was admitted to the hospital with chest pain. An ECG showed a ST-elevation. Laboratory testing revealed increased level of troponin T. STEMI of inferior wall was diagnosed. In echocardiographic examination akinesia of left ventricle inferior wall was observed. Coronarography showed a total RCA occlusion in segment 1/2. A guidewire was put into the vessel. Due to lack of the flow an aspiration thrombectomy was performed and afterwards the stent was implanted. After stent deployment the posterolateral artery and posterior descending artery showed features of distal embolization and slow-reflow phenomenon. After the procedure the chest pain subsided but patient complained of dyspnea. Controlled ECG revealed a persistent ST-elevation. There was also a significant increase in troponin T level. Finally, within 5 days from the PCI the patient was released from the hospital.

The slow-reflow phenomenon leads to a potential dissociation between coronary revascularization and myocardial perfusion in STEMI. Micro-embolization remains the principal mechanism responsible for microvascular obstruction. It is regarded as independent predictor of death or recurrent of myocardial infarction. Clinically it manifests with prolonged chest pain, dyspnea and may progress to cardiogenic shock, cardiac arrest, serious arrhythmias and acute heart failure.

**Keywords: slow -reflow, STEMI, micro-embolization**

## **Anemia during pregnancy in transplant recipient**

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Post-transplant lymphoproliferative disease (PTLD) affects up to 2.8% of liver transplantation (LTx) recipients.

I present the first case report of PTLD in pregnant LTx recipient. 23-y.o. nulliparous women after LTx at the age of 7 due to progressive obliterative cholangiopathy, was consulted in the outpatient clinic at 21 weeks of gestation. At 28 wks. gestational diabetes, anemia (hemoglobin of 8.0g/dL) and urinary tract infection were diagnosed and the patient was referred to the hospital. Laboratory tests showed increased levels of CRP64mg/L, LDH-1823U/L and uric acid-7.2mg/dL. High levels of CMV and EBV IgG were detected. Marrow biopsy was performed with inconclusive results. On abdominal ultrasound and MRI enlarged disintegrated masses in the left upper quadrant of the abdomen (189x86x60mm, suggesting enlarged lymph nodes) were detected. Since 32 weeks the patient's condition had gradually worsened due to severe dispone and abdominal pain. Moreover, fetal hypotrophy was diagnosed at 30 weeks. At 33 wks. due to imminent fetal asphyxia male newborn of 1640g was delivered via caesarean section. Large tumor masses infiltrating colon were revealed and the colostomy was performed. Histopathologic examination of suspected lesions revealed monomorphic PTLD (Diffused Large B-cell Lymphoma) and the pharmacotherapy (rituximab followed by chemotherapy due to poor response to standard protocol) was introduced. Postoperative period was complicated with the colostomy leakage and peritonitis treated surgically. Critical condition required antibiotic therapy, reduction in immunosuppression and repeated blood transfusions. Although patient's condition is stable, the prognosis remain poor.

**Keywords: PTLD, pregnancy, anemia, liver transplantation**

## The ethics in disorders of sex development

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No area of pediatric endocrinology engenders more controversy than the management of DSD conditions affecting reproductive development. Guidance from clinicians and ethicists has focused overall well-being of the child by minimizing physical and psychosocial risk, preserving potential for fertility and upholding the individual's rights to participate in decisions that will affect their now or later. Nonetheless, respecting parents' wishes, especially regarding to gonadectomy, may impinge on the child's right to participate in decision making and may reduce the child's options for the future.

We are presenting comparative cases of two phenotypic females aged 15 and 17 years admitted due to disorders of sex development. Both girls were diagnosed with 46, XY karyotype. First one was recognized in age of 3 years as a result of bilateral inguinal hernia investigations and the other one in age of 16 years subsequently to diagnose of primary amenorrhoea. Hormonal test results revealed high testosterone level in both girls (529.8 ng/dL and 754.8 ng/dL respectively). They are both diagnosing for androgen insensitivity syndrome (AIS). In both cases psychosexual functioning depended on respecting their rights to preserve physician-patient privilege. One and the other psychological rehabilitation were conditioned by lack of acceptance of own sex.

DSD touch upon emotional dimensions, psychological, biological, genetic and medical issues. They pose a considerable challenge for those affected, their families and care takers but also for medical professionals who attempt to and by their profession and ethical standards do provide advice, medical services and care for the affected people.

**Keywords: disorders of sex development, androgen insensitivity syndrome, ethics**

## **Post-inflammatory pseudocysts as a complication in the course of acute pancreatitis in adolescent – case report**

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Among paediatric population acute pancreatitis occur less often than in adults. Edematous pancreatitis is the most frequent clinical manifestation in children, while necrotizing type represent less than 1% of cases. Necrosis may involve pancreatic parenchyma and surrounding tissues with formation of encysted fluid collections.

The study presents a 13-year-old boy with acute pancreatitis complicated by post-inflammatory pseudocysts. Patient was hospitalised in a paediatric unit in place of residence because of severe abdominal pain and vomits, where acute pancreatitis was diagnosed. In the performed imaging, massive fluid collections around organ were found. In the interest of worsening general state despite therapy patient was transferred to hospital with higher referral level. During hospitalization subsequent progression of changes in the pancreatic parenchyma with inflammatory infiltration of local tissues was observed. Additionally, symptoms of bowel obstruction occurred. A Laparoscopic decompression of cyst provoking pressure symptoms within duodenum was performed. Since this moment, patient has been hospitalised twice in the clinic, first one for control purposes, the second because of recrudescence, but without surgical intervention. Then, boy was transferred to Child Health Care Centre.

Acute pancreatitis in children still present both diagnostic and therapeutic challenge. In spite of more beneficial prognosis beside adults, its course may lead to local or systemic complications. It should be noted that imaging tests, essentially USG and CT have an important role in diagnostics as well as search of possible complications.

**Keywords: acute pancreatitis, post-inflammatory pseudocyst**

## Case study of a child with Pompe disease

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Pompe disease is an autosomal recessive inherited disorder that causes a deficiency of lysosomal  $\alpha$ -glucosidase, which is involved in metabolism of glycogen. Second type of glycogenosis occurs in three forms: children, adolescents and adults. In the pediatric form, the lack of treatment leads to the death of a child that can be prevented by enzyme replacement therapy (ERT), giving a child  $\alpha$ -glucosidase alfa every 2 weeks.

The authors present a case of a girl from C VII P V born via caesarean section at 37Hbd, due to prenatal lumbar spinae with hernia. The girl was rated on the Apgar scale at 8pts. After delivery, the newborn was transferred to the Intensive Care and Pathology Department of the Newborn, where he spent 3.5 months. During the hospitalization, Pompe disease, carnitine deficiency, lung sequestration and hypertrophic cardiomyopathy were diagnosed. Currently, the child is 6 months old and in good general, circulatory and respiratory conditions. In the neurological examination the head circumference corresponds to 25pc, decreased muscle tone, deep tendon reflexes weakened on the upper limbs and difficult to elicit on the lower limbs. The girl was qualified for ERT with Myozyme, which was introduced when the child was 4 months old. Because of ERT, the child requires hospitalization every 2 weeks.

Pompe disease is a rare disorder and the clinical picture is ambiguous, which affects the time of diagnosis. Due to the possibility of treatment, early diagnosis and the therapy are of key importance for the patient's health condition. Due to numerous ailments, the child is subject to multidisciplinary care and rehabilitation.

**Keywords: Pompe disease, Glycogen storage disease type II, metabolic disorder**



## Orbital Manifestation of Granulomatosis With Polyangiitis

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Granulomatosis with polyangiitis (GPA) is a systemic inflammatory disease, which affects small and medium-sized vessels. Usually the symptoms are associated with upper respiratory tract, lungs and kidneys. Orbital complications occur in up to 60% of patients and it may lead to complete loss of vision and permanent facial deformity.

Our patient represented orbital inflammatory mass in both eyes with clinical manifestation. Presenting one of possible clinical manifestation of GPA and results of biological treatment. Medical history, MRI scans Results 23-year-old female diagnosed with GPA 7 years ago, initially presented recurrent inflammations of upper respiratory tract, swollen joints, cutaneous vasculitis and highly positive cANCA. When she was admitted to our clinic, she reported pain located in sagittal sinus area and bloody nasal discharge. The main problem was pain, feeling of tension and lachrymation of left eye. MRI showed a diffuse mass, almost completely filling the orbit, infiltrating extraocular muscles and lacrimal gland. In the right orbit the mass was smaller and did not cause any symptoms. After corticosteroids, cyclophosphamide, azathioprine therapy had failed the patient was classified to biological treatment with rituximab, which resulted in reduction of mass and resolution of symptoms.

It is important to remember that GPA is a systemic disease and it can affect any organ, therefore the patients require comprehensive diagnostics. Nowadays, when biologic agents like rituximab are the option, amount of surgery treatment decreases. It is an effective and safe therapy but still limited because of costs.

**Keywords: Granulomatosis with polyangiitis, rituximab, orbital complication**

## **Relations between GERD and decrease FEV1 in patient after lung transplantation - a case report**

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Patients with cystic fibrosis (CF) are at risk of developing gastroesophageal reflux disease (GERD). It is mandatory for every lung transplant candidate due to be checked whether GERD occurs, because it will affect the graft.

Case describes a 25 years old male patient who received lung transplant due to cystic fibrosis 4,5 years ago. He did not suffer from GERD at qualification. 3,5 years after transplantation, follow-up examinations revealed 29 % decrease of FEV1%. Additionally, bronchoscopy revealed the symptoms of inflammation associated with acidic aspiration. Gastroscopy and esophageal 24h pHmetry were performed. GERD was confirmed and fundoplication was carried out. An improvement was noticed 3 months after procedure with FEV1% increase from 54% to 67%.

GERD in CF patients can occur after lung transplantation. Fundoplication eliminated GERD and protected the graft from further deterioration.

**Keywords: lung transplantation, Cystic fibrosis, GERD**

## Hemolytic disease of the newborn caused by anti-M antibodies – case report

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Maternal alloantibody production is stimulated after fetal red blood cells antigen exposition absent on the mother's red blood cells. The maternal IgG antibodies produced are able to cross the placenta and get into fetal bloodstream, forming an antibody-antigen complex. Alloimmune hemolytic disease of the newborn (HDN) caused by maternal anti-M antibodies rarely occurs.

We report a case of anti-M hemolytic diseases in neonates.

Term male neonate born by caesarean section in good general condition, developed jaundice and severe anaemia within first 48 hours of life. The child required blood complementary transfusion as well as phototherapy since the first days of life. HDN due to serological conflict in MNS system was diagnosed – anti-M antibodies were detected in mother's blood after birth. The newborn was discharged from hospital in good general condition in the 9th day of life.

Anti-M alloimmunization is very rare, however it may lead to hemolytic disease of the newborn with multiple complications. It has to be considered in any case of HDN of unknown etiology or unusual course.

**Keywords: MNS antigen system, anti-M antibody, hemolytic disease of newborn, alloimmunization**

## **MEN 2A syndrome – rare and no so easy to diagnose – a clinical case**

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Multiple endocrine neoplasia type 2A (MEN2A) is caused by mutation in the RET proto-oncogene on chromosome 10. This disorder is characterized by medullary carcinoma of the thyroid, parathyroid hyperplasia or adenomas (causing hyperparathyroidism) and pheochromocytoma. Comorbid conditions must be considered during diagnosis and treatment of MEN2A syndrome.

A 42-year-old woman with MEN2A syndrome was admitted to the endocrinology department to evaluate hormone and electrolyte balance. The syndrome was confirmed by genetic testing in 2002. It was preceded by bilateral resection of the adrenal gland (due to symptomatic phaeochromocytoma) and removal of the thyroid gland (due to diagnosis of medullary carcinoma) with the parathyroid glands. During endocrinological diagnostics and surgical procedures, the patient was undergoing dialysis therapy due to chronic renal failure diagnosed in 1991. In 2003, the patient suffered a sudden cardiac arrest due to hyperkalemia. In 2010, the patient underwent kidney transplantation. In addition, the patient suffers from osteoporosis (pathological fractures of the spine and metatarsus, most likely caused by hyperparathyroidism) and prediabetes (probably as a complication of the pharmacological treatment).

A rare disease may co-exist with diseases not included in its typical symptomatology, and the occurrence of less common variants of the disease is an additional challenge in the diagnostic process. Regular follow-up appointments of patients with the MEN syndrome should be an inherent element of comprehensive care to detect and correct new abnormalities early.

**Keywords: MEN 2A syndrome, hyperparathyroidism, pheochromocytoma, renal failure**

## Case study of patient with non-ketotic hyperglycynemia

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Nonketotic hyperglycynemia (NKH) is an autosomal recessive, inborn error of the glycine metabolism. It usually occurs in a neonatal form with lethargy, hypotonia, myoclonic jerks, hiccups and progressing apnea. NKH can also occur as an infantile form or atypical form with late onset.

The study presents a boy born vaginally at term with weight 3570g, head circumference 33 cm, Apgar score of 8/9points. During pregnancy, his mother sensed in utero hiccups. Right focal seizures and frequent hiccups were observed from 7th day of life. EEG showed generalized epileptiform discharges. He was treated with phenobarbital and complete cessation of seizures was reached. However after the treatment had been discontinued epilepsy returned in 3rd month of life as generalized (myoclonic, tonic) and focal seizures (myoclonic, versive), what caused a hospitalization. Hypsarhythmia and features of burst suppression were presented in EEG. MRI showed hypomyelination and a thin corpus callosum. The infant also presented with axial muscle hypotonia, asymmetrical spastic hypertonia of limbs and dyskinesia. Developmental delay and dysmorphic features were observed. Phenobarbital, valproate, vigabatrin, clobazam were introduced. During the hospitalization elevated glycine in plasma and CSF was found, CSF/plasma ratio was 0.081. Dextromethorphan, sodium benzoate and ACTH were used. Full cessation of seizures was reached. Pathogenic mutation was found in both alleles of AMT gene and confirmed the diagnosis.

Wide variety of symptoms can occur in NKH. ACTH can be an effective as an anti-epileptic drug in some cases of NKH.

**Keywords:** glycine encephalopathy, ACTH, glycine

## **Isolated hypogonadotropic hypogonadism (IHH) in a male newborn with micropenis**

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Isolated GnRH deficiency is rare disorder with an estimated incidence of one case per 8,000 male births. It is caused by a defect in the hypothalamo-gonadal axis, resulting in low levels of gonadotrophins, sex steroids and a delay or absence of puberty. It may be diagnosed in male newborns with micro penis/undescended testes/microorchidism.

A 2 months old boy was referred for an endocrine consultation for micropenis. Postnatal history presented a male infant was born at 38 weeks of second pregnancy, by caesarian section with weight of 4200 g, length of 56 cm, head and chest circumference 38 cm, 37 cm respectively. Apgar scale was assessed on 10. After delivery USG of testes and abdominal was performed - testes in scrotum 8-8,5mm x 5,3-5,5mm, abdominal examination without deviations. The child's development to date was going well. Physical examination revealed micropenis (1 cm length), normal testes (volume 2 ml) in the scrotum. Laboratory work up revealed undetectable levels of both gonadotrophins (LH, FSH) and low testosterone level (0.11 ng/mL, N: 20-80 ng/mL). Levels of ACTH, PRL, IGF-1, TSH, FT4 as well as the values of Na<sup>+</sup>, K<sup>+</sup> and glucose were normal. Patient was diagnosed as a case of IHH. He required treatment of micropenis by use three injections of testosterone (testosterone enanthate; 25 mg i.m. every 4 weeks). After it penis length reached 3,5 cm. Due to young age the sense of smell cannot be assessed. MRI of the pituitary gland, hypothalamus and genetic testing are planned.

Male newborns with micropenis need endocrine consultation. The assessment of the pituitary function and MRI are needed. Treatment of micropenis by use three injections of testosterone was effective and safe in this age group.

**Keywords: Isolated hypogonadotropic hypogonadism, micropenis,**

## **Natural history of posterior pituitary lobe involution after moderate head injury in a child with central diabetes insipidus (CDI)**

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CDI is characterized by insufficient ADH production in the brain. Lack of this hormone leads to increased urine production (polyuria). A large part of CDI in children with acute brain insult represent severe head trauma (18,5%).

We present the young woman with CDI diagnosed after the injury during sledge riding. The patient had had head injury as a nine-year-old girl after falling from a sledge. She butted but did not lose her consciousness and suffered from severe headache. Couple days later she started to present with polydipsia and polyuria. One month after injury she was admitted to endocrinology ward where diabetes mellitus was excluded as a cause of these symptoms and on the basis of the dehydration test CDI was diagnosed. Since this hospitalization the patient has been treated with desmopressin. During several months after injury the transient decrease of growth rate was observed, therefore she was diagnosed due to the suspicion of multihormonal pituitary insufficiency, but finally the function of pituitary gland was assessed as normal. Her growing and puberty progressed normally, the menstruation cycles have been regular. MRI of hypothalamo-pituitary region have been changing during the treatment. At the time of CDI diagnosis and two years after injury MRI of pituitary gland was normal, but in repeated exams the posterior part of the pituitary gland has been lessened its brightness and finally it disappeared. An anterior pituitary lobe and a pituitary stalk have not changed.

This case report shows that sometimes even apparently harmless injury can induce CDI probably due to damage of nerves tracts or vessels, with reducing the perfusion of hypothalamus neurons tracts which transport ADH.

**Keywords: Central diabetes, insipidus**

## **A case of familial cerebral cavernous malformation difficult to differentiate from neurocysticercosis**

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Cerebral cavernous malformations (CCM) are vascular malformations in the brain and spinal cord comprising closely clustered, enlarged capillary channels. The majority of CCMs become evident between the second and fifth decades with findings such as seizures, focal neurologic deficits, nonspecific headaches, and cerebral hemorrhage. CCMs occur in the population at a frequency of 0.1-0.5%. The family form of disease is extremely rare. Up to 50% of individuals with FCCMs remain symptom free throughout their lives.

A 62-year-old patient admitted to the neurological department with symptoms suggestive of neurocysticercosis. Several diagnostic tests were performed: EEG, CT and MR head scans, Quantiferon-TB test, serum levels of immunoglobulins (IgG and IgM) and other tests for detection of parasites infection. Obtained results of tests for TB and typical parasitic diseases were negative, while changes in EEG were detected suggesting an increased risk of epileptic seizures. In neuroimaging studies, the picture of pathological changes located supra and infratentorial. A radiological consulate was held with a conclusion suggesting a differential diagnosis of the observed changes towards FCCMs. When confronted with information about a similar picture of focal lesions of the brain in the patient's father, he was diagnosed with FCCMs.

The diagnosis of rare diseases requires cooperation of specialists from many fields. Lowering the cost of genetic tests and increasing their availability would reduce the frequency of incorrect diagnoses, which would transform into reduced costs of treatment and unnecessary, often harmful diagnostic tests performed in patients.

**Keywords: Familial Cerebral Cavernous Malformation, FCCMs, cooperation**



## **When the red blood cell is failing. How to diagnose hereditary spherocytosis in a newborn? - case report**

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Hereditary spherocytosis is the most common cause of hemolytic anemia, inherited mostly in an autosomal dominant manner. The clinical course of hereditary spherocytosis is diverse. Anemia and hyperbilirubinemia are the most frequent symptoms, which usually occur in infancy or early childhood.

The study presents a newborn with a severe form of hereditary spherocytosis complicated by significant hyperbilirubinemia in the first day of life. Female neonate born naturally at term with weight 2520g, in general good condition. On the first day the child was suffering from intensified jaundice. Blood tests revealed an increased MCV and anisocytosis. In differential diagnosis red-cell alloimmunization and congenital infection were excluded. The ultrasound examination of abdominal cavity was performed on the first day of life and it did not reveal any abnormalities. Despite intensive treatment of hyperbilirubinemia, blood replacement was carried out on the third day of life. The following control tests revealed anemia and reticulocytosis. Abdominal ultrasound showed hepatosplenomegaly. Due to the non-characteristic course of the disease, the EMA test was carried out. The result of the test made it possible to diagnose hereditary spherocytosis. After more than a month of hospitalization the baby was discharged in good condition.

Elevated bilirubin and hematological abnormalities, detected during the first days of life, may be symptoms of hereditary spherocytosis. The high sensitivity and specificity of the EMA test proves to be diagnostic of hereditary spherocytosis, which can take an atypical course in the neonatal period.

**Keywords: neonate, hereditary spherocytosis, EMA test**

## **The importance of ultrasonographic prenatal diagnostics - on the case report of sacrococcygeal teratoma in foetus**

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Sacrococcygeal teratoma is the most frequent fetal cancer, yet it is a rare condition with the occurrence estimated at 1 in 40 000 births. In prenatal ultrasound, the tumor is characterized by abundant vascularisation and the presence of cystic, solid or mixed form. The consequence of rich vascularization of the tumor is the common occurrence of fetal anemia, which can lead to fetal heart failure, and in more severe cases to the life-threatening fetal non-immune hydrops.

The presented case is a 30-year-old female patient in the 22nd week of her second pregnancy, who was admitted to the center of the third degree of reference due to the suspicion of the tumor of the sacrococcygeal region of the fetus. Ultrasound examination revealed a cystic-solid tumor with dimensions of 55x45mm and visible central vascularisation. In subsequent ultrasound examinations size of the tumor increased, reaching 120x100 mm in 37th week of gestation. The diagnosis of fetal anemia was put forward based on the non-invasive ultrasound examination of peak systolic velocity of middle cerebral artery. Due to gestational age and fetal anemia, the baby was delivered via Cesarean section in 37th week of gestation. 9 days after delivery, surgical removal of the tumor was performed and histopathological examination revealed mature teratoma.

Ultrasonography enables early diagnosis of sacrococcygeal teratoma which is crucial in determining diagnostic and therapeutic management and thus improve fetal survival. It enables selection of an appropriate way of delivery and performing therapeutic procedures in utero in case of life threatening complications associated with the tumor.

**Keywords: sacrococcygeal teratoma, prenatal diagnosis, ultrasonography**

## **Congenital High Airway Obstruction Syndrome – prenatal diagnosis**

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Congenital High Airway Obstruction Syndrome (CHAOS) is a very rare, lethal condition of foetus, whose incidence is unknown. It is a malformation caused by obstruction of foetal airways, mainly laryngeal atresia, but also subglottic stenosis, tracheal atresia, laryngeal cyst or web-like membrane. As a result of this condition pulmonary secretions accumulate in the bronchopulmonary tree causing secondary changes such as enlarged, hyperechogenic lungs, dilated bronchi, diaphragmatic flattening or inversion, ascites and hydrops. Usually CHAOS leads to intrauterine death. In cases of survival till delivery, an ex utero intrapartum treatment (EXIT) may be performed in order to provide the baby with oxygen after omphalotomy.

A 20-year-old primigravida at 21st week of gestation was admitted to the hospital due to foetal ascites. Ultrasonography in the obstetrical department showed enlarged, hyperechogenic lungs, inverted diaphragm, enlarged trachea and confirmed foetal ascites. Patient was disqualified from amniopuncture, because of elevated inflammatory markers. At 27 weeks of gestation patient was admitted to the hospital due to high risk of preterm delivery. Ultrasound, except from previous abnormalities, revealed polyhydramnios (36cm). The patient underwent amnioreduction. On the 6th day of the hospitalisation foetal death was reported.

Diagnosis and treatment of CHAOS, because of low incidence, is based mainly on case reports. Typical ultrasonographical findings are enlarged, hyperechogenic lungs, dilated trachea and bronchi, flattened or inverted diaphragm, compressed mediastinum and hydrops. Despite poor prognosis, EXIT procedure can be performed to give a chance for the newborn.

**Keywords: CHAOS, congenital high airway obstruction syndrome, prenatal diagnosis, prognosis, EXIT**

## A rare case of Bickerstaff brainstem encephalitis

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Bickerstaff brainstem encephalitis (BBE) is a rare, immune-dependent disorder of brainstem and peripheral nervous system characterized by the clinical triad of ataxia, encephalopathy and ophthalmoplegia. This disease requires differentiation with many neurological conditions and it is extremely difficult to make the proper diagnosis. Aim: Analysis of the case of a patient diagnosed with Bickerstaff encephalitis.

A retrospective analysis of the medical history of a 63-year-old female patient admitted to the Department of Neurology due to speech and balance disorders, image cleavage and weakness of the right limbs. In the neurological examination at admission, it was found: dysarthric speech, image division, central facial nerve paresis, right paraparesis, ataxia of the lower limbs. On the second day neurological progression was observed. Head NMR examination did not confirm the presence of recent ischemic changes in the brain. From the fourth day the general and neurological condition of the patient was very severe: unconscious, negative meningitis, narrow pupils, passive eyes, pain reaction of the left limbs and bilateral positive Babinski reflex. A gradual improvement in the patient's condition was observed from the thirteenth day of hospitalization

The clinical course, the presence of discrete demyelinating lesions in neurography, a significant recession of neurological symptoms within a few months of observation may suggest brainstem inflammation (despite the lack of serological confirmation - which is possible in 10% of patients). Establishing a diagnosis in the present case seems to be extremely difficult.

**Keywords:** bickerstaff, brainstem, brain, encephalitis,

## **A case report of 40-year old patient diagnosed with breast cancer during her fifth pregnancy**

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**Introduction** It is estimated that 1/1000 pregnant women may develop a cancer and breast cancer is one of the most common malignancies appearing during pregnancy. Pregnancy-associated breast cancer (PABC) is defined as breast cancer diagnosed during pregnancy or in the first postpartum year. Breast cancer most commonly metastasizes to lungs, liver, and bones.

We present a case of 40-year-old patient who presented to the Center of Woman's and Child's Health in Zabrze at 37th week of her fifth pregnancy to undergo a planned caesarian section. In current pregnancy she had been diagnosed with cancer of right breast (in USG examination: in right breast tumor sized 7x6mm, BI-RADS: 4b and tumor sized 20x17mm, BI-RADS:6; in MR examination: tumor sized 1,7 cm; metastases to axillary lymph nodes, liver and bones). She received 3 courses of chemotherapy during pregnancy (doxorubicin+cyclophosphamide chemotherapy). She had a history of thyroid cancer (2011, she underwent thyroidectomy), myomectomy (2008), and 3 caesarian sections (2009, 2012, 2015). She had no family history of breast or ovarian cancer. After the delivery the patient has been treated with Tamoxifen and a control PET-CT scan revealed reduction of tumor's size and metastases to liver and bones.

Malignancies during pregnancy are a growing problem, especially because of later ages of childbearing and continuous rise of breast cancer rates. Oncological awareness during this period of women's life is a crucial issue.

**Keywords: breast cancer, pregnancy**

## Utilization of MOTEK CAREN system in treatment of acrophobia

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Virtual reality exposure therapy (VRET) is an increasingly popular method of treatment augmentation for patients suffering from anxiety disorders. One of the novel, interesting options for VRET is the MOTEK CAREN system. However so far no studies have been published on its implementation in mental healthcare.

Presented here is a case of a 32 year old woman suffering from acrophobia, who underwent a series of four subsequent trainings on MOTEK CAREN system over the course of 8 weeks. On each training 4 samples of saliva were collected for sake of a salivary cortisol measurement. Additional sample was collected during a normal day at 2 pm, and is further referred to as „baseline”. Furthermore data from the system, on inter allia work of joints and reactions of the ground, were analyzed. Results Average increase in cortisol concentrations after 45 minutes past the test part equaled 4,49 nmol/l. Difference in average cortisol concentration measured during session 1 and session 4 equaled 3,125 nmol/l. Average salivary cortisol concentration before training equaled 10,4 nmol/l, while baseline value equaled 5,68 nmol/l.

Increase in the cortisol concentrations during the test part may confirm that the MOTEK CAREN system is inducing stress in the patient. Therefore it may be effective an effective method of VRET. Furthermore decrease in cortisol concentrations during 8 weeks of trainings, may be an evidence of an adaptation to the stressful situmulus, and therefore further effectiveness as an therapy augmentation method.

**Keywords: VRET, MOTEK CAREN, anxiety disorder**

## **Ultra –fast, high density 3D mapping system (Rhythmia Mapping System, BostonScientific) for catheter ablation of atypical atrial flutter - a case report**

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Ablation of atypical atrial flutter (AFI) is more challenging than typical AFI mainly due to the mapping difficulties. New approach using novel mapping system - Rhythmia HDxTM could be a feasible solution. This system uses 64-electrode Orion mini-basket catheter instead of multielectrode and it is capable of delivering 25x more data than others known systems, thus allows to ultra-fast, high-density 3D mapping.

A 54 year old male with paroxysmal atypical AFI was admitted to tertiary cardiology center. As a result of previous electrophysiologic intervention he has developed post-operative atypical AFI. Due to a patient's prior medical history (AF and typical AFI) and expected difficulties in localizing the arrhythmia electrophysiologists decided to use high-density (Rhythmia) 3D mapping system. Mapping multielectrode had been placed in LA using transseptal access. The INTELLAMAPT<sup>TM</sup> Orion Mapping Catheter was used to create an ultra high-density electro-anatomical model of LA. Mapping revealed fragmented low-voltage potentials on the posterior wall of LA. The applications were done on the posterior wall of LA. The ablation provided to convert heart rhythm from AFI to the sinus rhythm (78bpm). Patient became free of procedural and post-procedural complications and was discharged home the day after the procedure. During short-term follow up (30 days) one atypical AFI episode occurred but it self-limited and during long-term follow up (360 days) the patient remained free of arrhythmia.

The Rhythmia HDx<sup>TM</sup> Mapping System is a novel, effective and feasible tool to deal with variety of difficult to ablate arrhythmias such as atypical AFI.

**Keywords: Rhythmia, Mapping System, atypical atrial flutter**

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# **SESSION OF CASE REPORTS NON-INTERVENTIONAL II**



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## **A case report of 22-year-old male patient with congenital hypertrophic cardiomyopathy (HCM) and left ventricular outflow tract obstruction (LVOTO)**

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Noonan syndrome (NS) is a genetic condition characterized by variable cardiovascular anomalies (HCM, LVOTO and other). The treatment depends on the severity and symptoms. There are no data to support the use of invasive procedures to reduce LVOTO in asymptomatic patients. Invasive treatment to reduce LVOTO should be considered in patients with gradient above 50 mmHg, NYHA III–IV or recurrent syncope.

To report on case of HCM and LVOTO caused by Noonan syndrome and considering how to treat an asymptomatic patient. **Methods and Materials:** A 23-year-old patient with HCM narrowing the left ventricular outflow pathway in the course of NS was admitted to our clinic. Past medical history revealed growth hormone treatment and elongation of Achilles tendons in childhood. In the interview NYHA I. The patient denies reduced physical capacity, palpitations or faintings.

Physical examination recognized dysmorphism of the face, asthenic body. Audible systolic murmur with 5/6 loudness according to the Levine scale. In echocardiography, massive muscle hypertrophy of both chambers, systolic gradient in left ventricular outflow above 100 mmHg. In the magnetic resonance imaging, the left ventricular myocardial hypertrophy was found. The patient was qualified for implantation of the cardioverter-defibrillator.

A conducting the case is challenging because of considerations if the patient should be qualified for invasive treatment despite low reported symptoms or should be only implemented pharmacotherapy. In every case of heart disease should be considered if base the treatment on symptoms or objective parameters.

**Keywords:** hypertrophic cardiomyopathy, left ventricular outflow tract obstruction, Noonan syndrome

## **Growth impairment and nutritional status in a 16-year-old boy with Crohn's disease**

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Crohn's disease belongs to the group of inflammatory bowel diseases (IBD) which affects entire gastrointestinal tract.

In this report a case of a 16-year-old boy suffering from Crohn's disease whose disease symptoms were dominated by malnutrition and growth impairment is described. On admission to the hospital in an 11-year-old patient at the time the growth deficiencies, malnutrition ( 22 kg SDS (-1,84), 1,3m SDS (-2,11), BMI 12,4 SDS (-1,74)), microcytic anaemia and the abscess of the left buttock were observed. Basing of diagnostic investigations Crohn's disease was diagnosed. At the beginning of the treatment steroidotherapy, immunosuppressive and nutritional therapy were applied with temporary improvement of the general condition but with no improvement in antropometric parameters. Subsequently the biological therapy (infliksimab and adalimumab) was used. In spite of the intensification of the treatment after 3,5 years, the weight and the height did not improve (32 kg SDS (-1,86), 1,5 m SDS (-1,89), BMI 14,03 (SDS-1,61)). Due to persistent malnutrition, the short stature and deterioration of the general condition, the surgery was performed (right hemicolectomy) and biological treatment was modified. During the first year after the surgery, the body mass increased by 10 kilograms and growth increased by 11 centimeters (44 kg SDS (-1,49), 1,6 m SDS (-1,44), BMI 16,76 SDS (-1,1)). The frequent metabolic complication among children is malnutrition and growth impairment.

The aim of the treatment is to achieve a deep remission and the improvement of nutritional parameters, which allows to ensure a good quality of the child's life.

**Keywords: Crohn's disease, malnutrition, growth impairment**

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

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Fibromuscular dysplasia (FMD) of renal artery is an infrequent cause of arterial hypertension (HT). We present a case of FMD young female in whom treatment procedures were compromised by non-compliance and unplanned pregnancy.

A 21-year-old woman was admitted urgently to the hospital because of nausea, vomiting and extremely elevated blood pressure (BP) - 230/120 mmHg. Renovascular hypertension (RVHT) in the course of FMD was detected. Percutaneous renal angioplasty (PTRA) of the upper branch of right renal artery was successfully performed, pharmacological treatment reduced BP to was admitted to the Neurology Department with hypertensive crisis and intracerebral hemorrhage (ICH) of the left hemisphere - PTRA was postponed for the third time. Re-qualification to PTRA was scheduled for 6 months after ICH.

The therapy of RVHT due to FMD is not always easy especially when contraindications to PTRA occur. This case show a complexity of PTRA qualification and the problem of poor patient compliance.

**Keywords: renovascular hypertension, fibromuscular dysplasia, percutaneous renal angioplasty**

## **Acquired hemophilia A in the practice of an obstetrician/gynecologist- case report**

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Acquired hemophilia A (AHA) is kind of autoimmune disease in which there are produced neutralized antibodies against VIII clotting factor as a result. It's manifested by heavy plasma diathesis.

Our purpose was to describe clinical case of AHA in the patient hospitalized in the gynecology and obstetrics clinic. Our work is a description of clinical case of patient with undiagnosed AHA and ovarian cyst. She was operated in emergency mode with complications such as bleeding in the lesser pelvic area. Hospitalized in the intensive care ward. After hematological consultation the patient was diagnosed with AHA (APTT 97s, activity factor VIII 1,2%, count of factor VIII inhibitor 5,6jB). A therapy was applied in form of- concentrate of red blood cells and platelets, fresh frozen plasma, cryoprecipitate, recombinant factor VIIa, activated prothrombin complex concentrate witch allowed for normalization of coagulation parameters and improve clinical the patient's condition (APTT 37,6, activity factor VIII 59%, factor VIII inhibitor was not detected). Steroid therapy was applied and she was under the care of hematology clinic.

AHA is a sudden disease and requires quick clinical procedures.

**Keywords: acquired hemophilia A,bleeding, ovarian cyst,factor VIII inhibitor**

## **PRUNE BELLY SYNDROME-case report of 4-day newborn**

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Prune belly syndrome(PBS) is a rare congenital disorder inherited in autosomal recessive manner. Epidemiologically is more often observed among newborns of the male gender. Typically in the PBS's course, wrinkled of the coatings and lack of muscles are observed belly.

The case concerns male newborn, born through caesarean section,in good general state of health(10pt.in Apgar scale,PII,LI),with mass birthweight 2480g. Wrinkled coatings were found on abdominal wall and abdominal muscles. For further diagnosis, patient was transferred to the Neonatology Department in Wrocław. An ultrasound was ordered. X-ray of the abdominal cavity shown lack of testicles in the scrotum,widening of the left kidney, abdominal hernia. Lack of abdominal muscles with dimensions was confirmed (10x8cm). Prenatal imaging showed the presence of hernia located in the omphalocele in 20 t.c. A non-invasive genetic prenatal test was performed: NIFTY-negative result. Due to insufficient amount of food produced in patient's mother mammary glands, he was qualified for TPN (total parenteral nutrition). In good general condition the patient was transported to the Department of Pediatric Surgery for possible abdominoplasty

Up to 20% of fetuses with PBS are miscarried/die up to 4 years old,50%-up to 2 years of age. Presented case draws attention towards importance of prenatal diagnosis in detecting possible PBS risk factors, which in turn translates into postnatal rapid neonatological/surgical intervention. It appears that symptomatic treatment seems to be the best choice of procedure with surgical correction of congenital defects in dealing with PBS. The treatment increases chances of lengthening the child's life

**Keywords: Prune belly syndrome, abdominal surgery, prenatal diagnosis**

## **Limbic encephalitis - diagnostic difficulties presented on a case report**

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Limbic encephalitis (LE) involve dysfunctions of the limbic system, the cerebellum, the brainstem and can cause polineuropathies. LE is divided into many types of autoimmune encephalitis but paraneoplastic limbic encephalitis (PLE) seems to be the most important in clinical practice.

A 21-year old women with depression and anxiety disorder, complained of a speech disorder and problems with swallowing. She had also 4 episodes of breathing disorder and a weight loss of 7 kilograms in her medical history. The neurological examination showed dysarthric speech during long sentences, poor facial expressions and weakening of the facial muscles. The performed additional tests ruled out an oncological or infectious etiology of this symptoms. A head MR showed single hiperintensive lesions in T2 sequence in the white matter of the brain. The patient was redirected to the Neurology Department to perform further diagnostic. Myasthenia gravis and cancer was excluded. In the laboratory tests anti-NMDA antibodies were found. More episodes of swallowing problems and breathing disorders were observed. Metylprednizolon was admitted without therapeutic effect. Next plasmapheresis treatment was performed, which caused an improvement of the clinical state. LE was diagnosed and azatiopryn admitted. This resulted in an improvement of neurological condition. Due to the positive anti-NMDA antibodies that could suggest limbic encephalitis and lack of improvement after other treatments LE was diagnosed. This diseases may be associated with ovarian teratoma.

The patient is under constant neurological and oncological control

**Keywords** Limbic encephalitis, paraneoplastic limbic encephalitis, paraneoplastic disease, autoimmune encephalitis

## Lower limbs paralysis as presentation of SLE

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Systemic lupus erythematosus (SLE) is an autoimmune inflammatory disease, characterized by the impairment of multiple organ systems.

31-year-old woman was admitted to Department of Allergology due to SLE (renal failure, skin lesions, skin photosensitivity, erythema, leucopenia, neutropenia). During hospitalization increasing proteinuria, strong abdominal pain, ischuria, fever episodes and loins pain was noticed. Paralysis of lower limbs occurred. The patient was referred to Neurology Department, where neck stiffness, paralysis, hypoesthesia and deficiency of deep reflex of lower limbs was diagnosed. The MRI showed extensive inflammatory changes in spinal cord. The patient was consulted with infectious disease specialist. After sufficient tests, contagious provenance of problem was excluded.

The patient was treated with methylprednisolone pulses, immunoglobulins and plasmapheresis (during stay at Intensive Care Unit). Presently the treatment is continued with expectancy for withdrawal of paralysis.

**Keywords:** lupus erythematosus, SLE, paralysis, plasmapheresis



## Successful treatment of severe granulomatosis with polyangiitis case

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Granulomatosis with polyangiitis belongs to ANCA (anti-neutrophil cytoplasmic antibodies) associated vasculitides (AAV) - it is a rare disease characterized by necrotizing inflammation of small and medium-sized vessels, which typically occurs in respiratory tract and kidneys.

27-year-old woman was admitted to Department of Allergology. The patient's history had begun with previous internist and ophthalmologic long term observation with no conclusion. The patient complained of weakness, escalation of joints pain and suffered from diarrhoea, fever, skin lesions and conjunctival hyperaemia also. Based on, inter alia, symptoms, laboratory tests (i.a. renal insufficiency), pulmonary CAT scan, bronchoscopy and c-ANCA, anti-PR3 and ANA antibody presence, the diagnosis of granulomatosis with polyangiitis was made. In course of patients residence on the ward, renal insufficiency was increasing, moderate respiratory failure, hepatic impairment and neuropathy occurred. Anaemia incident and even hemorrhagic shock with gastrointestinal tract hemorrhage symptoms occurred. Laparotomy was necessary. The patient was treated, inter alia, with plasma exchange, CVVHD Ci-Ca therapy, immunoglobulin supplement, rituximab, steroids and antibiotic therapy. 74 PRBCs, 21 PPSBs, 3 platelet units, 11 units of FFP was transfused during patients stay at the ward. At the end of visit, patient presented good condition, consciousness and logical contact. The RTG showed regression of pulmonary signs.

The case shows plurality and severity of signs occurred in granulomatosis with polyangiitis and also the fact that, obstinacy and commitment can lead to recovery of patients even in distinctly poor condition.

**Keywords:** Granulomatosis with polyangiitis, AAV, plasma exchange, renal insufficiency, respiratory failure, hepatic impairment

## Oligomenorrhoea due to... severe iodine intoxication

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The case concerns a 23 year old female patient with menstrual cycle irregularity referred to the Department of Gynaecological Endocrinology.

On admission the basic life parameters were normal, she complained of irregular menstrual cycles, problems with normal weight maintenance and low mood. She was diagnosed with hypothyroidism 6 years before admission, currently without levothyroxine treatment. At first she was suspected of having PCOS, however the conducted tests revealed extremely high TSH level - 127, 24 uIU/ml [(normal range 0,35 - 4,94 uIU/ml) and very low fT4 and fT3 level. Detailed anamnesis revealed that, after 2 years of taking levothyroxine, the patient stopped the therapy, because she was unsatisfied with its result.

From then on she started visiting an iridologist who recommended her to take Lugola liquid (a solution of potassium iodide with iodine in water) in a dose: 8 drops 3 times a day. She continued this „therapy” for 1,5 year, which finally provoked severe iodine intoxication and sever hypothyroidism. Surprisingly the presented symptoms of severe hypothyroidism were scarce and nonspecific.

**Keywords: iodine intoxication hypothyroidism**

## Wilms tumor- does histological type have significant impact on prognosis?

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Wilms tumor (nephroblastoma) is the most common malignant tumor of kidney in children and one of two most common solid tumor located out of CNS. It represent 6-9% of all childhood cancers.

Case report of 5,5 years old girl diagnosed with nephroblastoma, blastemal type. Comparison of treatment and prognosis in this case with two other patients with the same histological type of the disease.

5,5 years old girl was diagnosed with nephroblastoma in the left kidney, classified as clinical stage I, high risk group. The alarm symptom was asymmetric bulge of the abdominal wall. After preoperative chemotherapy the left-sided nephroureterectomy was performed. Histological examination showed the nephroblastoma, blastemal type. There were 4 cancer relapses. During this time chemotherapy, radiotherapy and 3 surgical procedures were performed. At the moment the girl is suffering from the 4th relapse and the decision of palliative care has been made recently. In the second case treatment went similar, it ended with failure and death of the patient. It was primarily metachronous form of Wilms tumor, during recurrence the blastemal type was diagnosed. Third of the girls is now in remission after postoperative chemotherapy and left-sided nephrectomy. She is treated according to protocol for nephroblastomatosis. Histological type has significant impact on the prognosis in Wilms tumor. In blastemal type of nephroblastoma we can expect severe course of disease, multiple recurrences and insufficient response to the treatment.

**Keywords: Wilms tumor, nephroblastoma, blastemal type**

## Coincidence of the coexistence of two rare diseases

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The coexistence of endocrine and gastroenterological disorders may hamper patients' everyday live. Some endocrine diseases are manifested by changes in appearance, menstrual disorders. Gastrointestinal (GI) disorders do not limit the diagnosis not only to the gastrointestinal tract, but also they can contribute to the various diseases. Presentation of the process and procedures in acromegaly and the Peutz-Jeghers syndrome (PJS). Analysis and description of the history of the disease.

43-year-old patient with pituitary macroadenoma and PJS admission to departure for endocrine assessment and subsequent measures. The patient has been admitted to the departure since July 2015 with suspected pituitary adenoma, increased IGF1. Degradation in health condition leads to subsequent hospitalization; MRI presents the macroadenoma. During therapy with the somatostatin analogue, weight loss appears. Deepen diagnostic shows polypus in the small intestine. Surgical treatment was performed and the microscopic image of the polyp, which is characteristic of the PJS. The clinical state of the patient is currently stable.

MRI examination confirms macroadenoma. Neurosurgical treatment is necessary in the case of enlarging lesions, which push the nearest organs. The interaction of two coexistent rare diseases determines arrangement the optimal treatment of both syndroms, in order to stabilize the clinical condition. The priority of treatment of the PJS is, however, due to unavoidable GI operations, while it stops the neurosurgical activity in the treatment of acromegaly.

**Keywords:** Peutz-Jeghers syndrome, acromegaly, macroadenoma, IGF-1, somatostatin analogue, polypus

## **Parasitic diseases of the Central Nervous System. The problem is still not enough known**

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Parasitic infection of the central nervous system(CNS) can provoke many diagnostic problems. Around 20 species of parasites are able to invade CNS. The most common of them are *Toxoplasma gondii* and Neurocysticercosis. Neurocysticercosis is a leading cause of acquired epilepsy.

Men age 33 was admitted to the Neurology Ward at Clinical Hospital in Zabrze due to increasing disorders of consciousness, visual impairment, dizziness and vomiting compound with fever. In the medical history was reported that patient undergo kidney transplantation due to Goodpasture'a syndrome, suffered from chronic kidney failure level 3, hypertension, diabetes, anaemia. MRI examination reveal focal lesions in both hemispheres. Laboratory tests shows normal level of eosinophils, test for HIV,HBV,AFP and toxoplasmosis were negative, CMV IgG (>500U/ml) and IgM (16,73)-positive, CEA-positive, there was occult blood in fecal examination, CSF examination reveals lymphocytic pleocytosis with higher level of IgG. Neurocysticercosis and CMV infection were suspected. Patient was treated by antibiotics, VPA, ganciclovir, albendazolum, flukonazole, antiedema drugs, insulin and anti depression drugs. In the control MRI regression of the lesion was observed. Patients was transported to Nephrology Department. Second hospitalisation in the neurological ward showed further regression of previous pathology.

Patients condition showed progression due to pneumonia. CT display nodular infiltrations in the lungs. Bronchofiberoscopy confirmed *Aspergillus* presence. Presented case shows diagnostic difficulty in immunosuppressed patients and precious role of interdisciplinary treatment.

**Keywords: parasitic infection of the CNS, CMV infection, immunosuppression**

## **Epilepsy and other diseases caused by hypothalamic hamartoma**

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Central precocious puberty (CPP) in girls is mostly idiopathic, however among group of young children it is usually caused by organic lesions like hypothalamic hamartoma (HH). The reason for the occurrence of CPP among these patients is probably ectopic generation and pulsative release of gonadotropin-releasing hormone (GnRH) from the HH. The often-diagnosed diseases are epilepsy and behavioral disorders among patients with HH in addition to CPP. The choice of conservative or surgical treatment depends on the severity of neurological signs To report on case of epilepsy and CPP caused by HH. An 19-month-old girl was admitted due to progressive development of breast and pubic hair with concomitant acceleration of growth velocity since at least 6 months. Moreover a change in child's behavior in the form of tears and irritability and laughter attacks was observed.

Physical examination revealed body height at the level above 97 percentile, height age 3.5 years, bone age 4 years and 2 months , BMI at the level of 75-90 percentile. Puberty Th III, PII according Tanner scale. GnRH stimulation test revealed significant increase in the level of luteinizing hormone (122,16 in the 60 th minute), that confirmed the diagnosis of CPP. Magnetic resonance imaging (MRI) showed the presence of HH. In the neurological examination, epilepsy with laughter attacks. Treatment with a triptorelin - gonadorelin analogue was administered.

In a case of epilepsy and CPP in young children and infants organic lesions such as HH should be considered.

**Keywords: hypothalamic hamartoma, epilepsy, central precocious puberty**

## Hypersensitivity to vitamin D – a case report

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Recently, vitamin D has been in the centre of interest of many scientists. Relationships between vitamin D deficiency and various disorders has been proved and this, consequently, led to the extension of supplementation recommendations. Hypersensitivity to vitamin D is a pathological response to a dose considered safe, which takes place due to unregulated overproduction of 1,25(OH)D by non-renal tissues. In cases like this, administration of prophylactic doses may cause symptoms similar to overdose of vitamin D, including nephrocalcinosis and soft tissue calcification.

4-month-old boy was admitted to Department of Pediatric Endocrinology of Jagiellonian University Medical College due to craniotabes. Physical examination presented craniotabes, positional asymmetry and left-sided cryptorchidism. Laboratory tests revealed only elevated level of phosphorus. Awaiting the results of PTH, 1,25(OH)D and 25(OH)D levels, the patient was discharged home with recommendation of modification of calcium and phosphorus supply. After obtaining the missing results, due to high concentration of vitamin D (73.8 ng/ml), its supplementation was stopped and a calcium restriction diet was introduced. In subsequent examinations in 7th and 10th month of age, normal weight and height gain (50pc) was observed. There was no craniotabes or other deviation in physical examination.

Undoubtedly, vitamin D is an important component of a diet and rational supplementation is indicated practically in all age groups. Nonetheless, physicians should remember that following the latest guidelines does not absolve from individual assessment of indications and contraindications for supplementation.

**Keywords:** Vitamin D, Vitamin D supplementation, hypersensitivity to vitamin D, craniotabes

## Sturge-Weber Syndrome- case presentation

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Sturge- Weber syndrome is a rare congenital disorder classified as phakomatosis. The disease is manifested at birth by port-wine stain localized on face, leptomeningeal angiomas and glaucoma.

The authors present a 4 years old boy born vaginally at term weighing 2800 g with head circumference of 31 cm, rated 10 points of Apgar scale, with angiomas localized on left side of face and within oral mucosa . At 3 month of age he was hospitalized due to prolonged episode of focal right-sided seizures with secondary generalization. Brain MRI showed lesions characteristic for Sturge -Weber syndrome -leptomeningeal angiomas of left cerebral hemisphere and secondary calcification .Antiepileptic treatment allowed for transient reduction of seizures. At the age of 2 years the patient was referred to Neurosurgical Ward for left hemispherectomy, because of lack of efficacy of antiepileptic therapy. At present the child has a delayed psychomotor development: he does not speak and he had limited visual contact. Neurological examination shows right hemiparesis and partial right-sided seizures, which appeared again three weeks ago.

Sturge-Weber syndrome leads to rare children disability. Treatment is exclusively conservative. The main aim is to limit seizures. One of the treatment is hemispherectomy.

**Keywords: Sturge- Weber syndrome, hemispherectomy, epilepsy**



## **Neurological disorder in a patient after sudden out-of-hospital cardiac arrest lasting 20 minutes**

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Cardiac arrest (CA) is a sudden, unexpected condition involving the end of heart work, which is manifested by the cessation of the breathing process, as well as the lack of pulse. Taking immediate treatment and proper rehabilitation can improve life after cardiac arrest. Among patients who have had CA and have been resuscitated, there are those who may experience cognitive impairments associated with brain hypoxia, which in turn may lead to disability. The aim of the study was to describe the case of CA occurrence outside the hospital, including the examination of the patient's disorders.

In a 47-year-old patient in August 2017, there was an episode of sudden cardiac arrest with ventricular fibrillation. The patient was brought to the hospital by the Rescue Team after resuscitation lasting 20 minutes. In the patient from the very beginning there are cognitive and consciousness disorders. The woman repeatedly refuses to cooperate during the examination. In September 2017 with intent of intensive rehabilitation, she is transported to the central clinical hospital. The patient is aggressive, periodically makes contact, is able to eat on her own, complains about visual hallucinations.

Sudden out-of-hospital cardiac arrest is associated with brain damage due to hypoxia. Depressive disorders as well as cognitive functions may occur. The case of a 47-year-old woman is characterized by a non-specific combination of many disorders.

**Keywords: sudden cardiac arrest, disorders, depression, cognitive functions**

## **Lessen T-helper (CD4) cell level as a cause of late recommence of urogenital Chlamydia trachomatis infection and following reactive arthritis by an adolescent**

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Reiter's syndrome (RS) is an uncommon complication of urogenital Chlamydia trachomatis infection, which manifests as the classic triad of symptoms: conjunctivitis, nongonococcal urethritis and asymmetric oligoarthritis. RS is unlikely to manifest after 4 months of the initial symptoms of the urogenital infection as the recurrence of once treated Chlamydia infection. In the scientific publications there is no such a case reported. This case is to reveal how diversified image of the urogenital infections can be and how difficult it can be to treat them especially nowadays in the era of rising antibiotic resistance.

18 years old patient was admitted to the Department of Surgical Oncology as a result of cervical and inguinal enlargement of lymph nodes. The diameter of group IIa of the cervical nodes was 1.5cm, the left inguinal lymph node of 2cm and right inguinal node of 1.5cm which were measured by ultrasonography. The possibility of lymphoma was rejected and finally excluded by biopsy of the left inguinal node and histopathological examination. Any other proliferative process was excluded by MRI. Infection of T. pallidum was excluded by VDRL and RPR tests. The HIV infection was excluded by ELISA. 2 weeks after the biopsy of the node the patient has presented sepsis and following reactive arthritis for which he was treated in the Department of Rheumatology.

According to the scientific literature RS may appear in approximately 0.5% of all cases of chlamydia trachomatis infections. The only symptom of the recurrence of Chlamydia trachomatis infection were swollen lymphatic nodes which were manifested after 4 months of the primal infection.

**Keywords: Immunology STD chlamydia trachomatis**

## Case report of an infant with extreme hypotrophy

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Intrauterine growth restriction (IUGR) affects 3-10% of liveborn infants. The diagnosis consist in at least two fetal biometric measurements which present weight and/or length of the body below 10th centile.

The fetus of 29 years old, healthy, non-smoking, vegan woman in 30+1 Hbd characterized by following biometric parameters: BPD=7,16(28+5Hbd), HC=25,49(27+5Hbd), AC=21,72(26+1Hbd), FL=4,78(25+6Hbd), weight=933g, FHR=140bpm with short-lasting slowdowns of heart rate up to 70bpm. In 35+6Hbd BPD=7,62(30+4Hbd), HC=29,05(32Hbd), AC=23,45(27+5Hbd), FL=5,84(30+4Hbd). The body weight amounted 1369g(29Hbd), FHR=135bpm. The fetal symmetrical hypotrophy was diagnosed. In this connection genetic disorder was suspected. Because of extreme hypotrophy, remittent slowdowns of heart rate, the patient was referred to caesarean section in 36Hbd. The girl was born in medium condition, with moderate asphyxia, body weight: 1300g, body length below 3rd centile. Infant was rated 5-6- 6-6 in Apgar scale. After the labour none dysfunction was observed besides of cyanosis. Vitality was rated as medial. The infant was ventilated for 1 day. Blood count examination showed megaloblastic anaemia. Child's condition gradually improved.

The mother's diet has got essential influence on fetal intrauterine growth. The insufficiency of vitamins caused by incommensurate balanced vegan diet could be the cause of IUGR. The facts that infant was born with an extreme hypotrophy, with no other dysfunction and after labour the condition quickly improved, lead to conclusion foregoing etiology could be the cause of this condition.

**Keywords: Fetal hypotrophy, Intrauterine growth restriction, veganism**

## **Therapeutic hypothermia in neonates – is it always proceeded according to the plan?**

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Therapeutic hypothermia is a medical procedure which allows to reduce the progression of hypoxic-ischemic injury developed in the perinatal period. It is based on decrease of the rectal temperature to 33-34°C for 72 hours. Newborns born after 35th week of pregnancy, who have undergone perinatal hypoxic insult and fulfilled the criterions of qualification are eligible for the procedure, according to the strict protocol.

The aim of the study is to present three clinical cases in which the way of performing therapeutic hypothermia differ from the standard: in two cases it was necessary to shorten the time of cooling and in one of them the newborn infant was breathing on its own. All the presented newborns were hospitalized and treated in Intensive Care and Neonatal Pathology Unit in GCZD in Katowice between 2015 and 2017. All of them fulfilled the inclusion criteria for the procedure.

Case A included the neonate with severe congenital infection, with low Apgar score at birth and progressing instability of vital functions. Case B presented the newborn with an extreme anaemia as a result of perinatal haemorrhage, which was the main cause of his critical condition. Due to patient's severe clinical status in cases A and B it was necessary to interrupt the procedure. However case C is a neonate with good cardiorespiratory function and sufficient tolerability of low body temperature.

Presented cases shows diversity of clinical picture and course of the therapy. Additionally, medical standards and algorithms shouldn't exempt from current evaluation of patients and modification of the treatment methods.

**Keywords: therapeutic hypothermia, treatment, hypoxic-ischemic injury**

## **Diagnostics visualization of lichen planus with high growth dynamics. A case report**

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Lichen planus (LP) is a mucocutaneous disease affecting approximately 0.5–2% of the population. The malignant potential of oral LP lesions is a cause of controversies in the literature, but constitutes an important clinical issue as oral lichenoid and contact lesion, which are separate nosological entities, can also undergo malignant transformation.

In this paper we present a case of highly dynamic oral lichen planus that rapidly transformed into preinvasive cancer and discuss the factors influencing this transformation. A 60-year-old Caucasian man came to the Department of Oral Surgery at the Medical University of Warsaw, from the Department of Diseases of the Mucous membranes and Periodontics due to the presence of white lesions on the mucosa and suspicion of lichen planus and a request for consultation and possible treatment of the patient. In the interview, the patient reported the appearance of lesions three months earlier after extraction of molars on the left side. The changes were not accompanied by any discomfort. In the clinical trial, enlarged, painless, shifting submandibular and cervical lymph nodes were found. Intra-oral on the left and right cheek there were extensive white-red lesions around the molars 4 x 2 cm and 4 x 4 cm with the character of Wickham's mesh. In the central part of the lesion on the right side a erosion was found.

Although there are doubts about the potential for malignancy changes in the mouth in the course of lichen planus, careful observation of patients with this unit is indicated disease. He has cancerous changes the impact of many factors whose presence can be detected thanks to meticulous physical and subjective examination

**Keywords: lichen planus, cancer, case report**