



INTERNATIONAL MEDICAL CONGRESS OF SILESIA

**Katowice Ligota**

27 – 28 April 2017

# ABSTRACT BOOK



SUM W KATOWICACH

STUDENTS' SCIENTIFIC SOCIETY  
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 2017 also known as “SIMC 2017” is a continuation of the International and Interfaculty Conference of Students of Medical Universities, organized by Student Scientific Society of Medical University of Silesia since 2006. It has become a permanent entry in the calendar of scientific events in Poland.**



**Each year hundreds of students from Polish and foreign medical universities take active participation in the Conference. I am glad that this is our University that can be a host to this wonderful project.**

**I am convinced that this year's Conference will constitute, as its previous editions did, a valuable occasion to present achievements and share experiences between young adepts of Medical Arts.**

**I believe that the scientific program prepared by the Organizing Committee will meet the expectations of all participants and the accompanying events will ensure the possibility of establishing interesting acquaintances.**

**I 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.**

**Finally, I wish all of the participants many scientific successes and persistence in pursuit of chosen life goals.**

**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 we are able to organize the conference together with participants of postgraduate studies for the first time. They enrich the conference with new sessions. It is our greatest joy to see new forms of activities appear – such as workshops organized by SIMC. 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 27-th of April on the campus of Medical University of Silesia in Katowice.**

**The head of  
Students' Scientific Society  
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 2017 the honor of organization of the INTERNATIONAL MEDICAL CONGRESS OF SILESIA (SIMC) 2017 fell to our Board. Over 540 papers were sent this year and divided between 33 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. For the first time in the history of the Conference we included sessions aimed at doctoral students. This was possible thanks to the cooperation with the Doctoral Students' Self-Government. Also as a novelty we have organized workshops during which participants can 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 Jałowicki 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 Ewa Kluczevska, 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 answered to our proposition of cooperation 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 Society  
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) 2017, beside the Students’ Scientific Society of the Medical University of Silesia. We believe profoundly that initiated agreement between students and PhD students will pave 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 workshops organized this year for the first time, 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 Jałowiecki, 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 Ewa Kluczevska, 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

## THURSDAY, 27<sup>TH</sup> APRIL 2017

7 <sup>30</sup> – 8 <sup>30</sup>	Participant's registration
9 <sup>00</sup> – 12 <sup>00</sup>	Plenary sessions – part I
12 <sup>00</sup> – 12 <sup>30</sup>	Break time
12 <sup>30</sup> – 14 <sup>00</sup>	Plenary sessions – part II
14 <sup>00</sup> – 14 <sup>15</sup>	Lecture: "Reference tools for Medical Students. ClinicalKey"
14 <sup>20</sup> – 14 <sup>50</sup>	Lecture: "The use of Ultrasonography with live scan"
15 <sup>00</sup> – 19 <sup>00</sup>	Ultrasonography Workshops

## FRIDAY, 28<sup>TH</sup> APRIL 2017

7 <sup>00</sup> – 8 <sup>00</sup>	Participant's registration
8 <sup>30</sup> – 13 <sup>00</sup>	Plenary sessions
11 <sup>00</sup> - 15 <sup>00</sup>	Workshop sessions: first-aid, birth simulator, acute states in diabetology, surgical suturing
15 <sup>30</sup>	The official part: Ewa Kluczevska Ph. D. lecture Awards announcement
21 <sup>00</sup>	Party in "Królestwo" Club



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INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF DOCTORAL CLINICAL MEDICINE**

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## THE ROLE OF FRACTALKINE AND ADIPONECTIN IN THE PATHOGENESIS AND DIAGNOSIS OF GESTATIONAL DIABETES MELLITUS

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Work's tutor: dr n. med. Mariusz Kuźmicki

**Introduction:** Gestational diabetes mellitus (GDM) is defined as a carbohydrate tolerance disorder which is diagnosed for the first time during pregnancy. It is one of the most common metabolic disorders affecting pregnant women. Currently the GDM diagnose process is mainly based on oral glucose tolerance test (OGTT). Discovering new GDM biomarkers will allow for a better understanding, diagnosis and treatment of GDM patients. Fractalkine is a chemokine potentially correlated with insulin resistance. Adiponectin is a protein produced by adipose tissue which increases insulin sensitivity.

**Aim of study:** The assessment of usefulness of measuring fractalkine and adiponectin levels in women in the first trimester of pregnancy in GDM diagnosis.

**Methods and Materials:** The test group consisted of 15 patients with GDM and the control group of 58 non-GDM patients. The serum of women in the first trimester of pregnancy was examined and levels of fractalkine and adiponectin measured by (respectively) ELISA and RIA tests. Statistical analysis was performed to assess the significance of the results.

**Results:** We revealed a decrease of fractalkine and adiponectin ( $p$  lower than 0,05) levels in GDM patients. We have confirmed a correlation between adiponectin level and HOMA-IR

**Conclusions:** Lower concentration of adiponectin in the GDM patients in the first trimester of pregnancy may be a factor affecting the development of insulin resistance. Lower fractalkine level may be a result of pancreatic  $\beta$ -cells dysfunction.

**Keywords:** gestational diabetes mellitus, fractalkine, adiponectin

## EVALUATION OF FACIAL EXPRESSIONS IN PATIENT WITH SCHIZOPHRENIA - PILOT STUDY

Krzysztof Maria Wilczyński, Arkadiusz Dudek, Elżbieta Mazgaj, Marta Ciulkowicz, Maciej Ćmiel

Faculty of Medicine, Medical University of Silesia

Work's tutor: Dr Krzysztof Krysta

**Introduction:** Across multiple studies, individuals with schizophrenia are usually considered to have lowered observable facial expressions in comparison with a healthy persons. Theroretical wiritngs include plenty of descriptions of such phenomenon, although no regular studies were conducted in this field. This is mostly due to serious difficulties in reconstruction of human emotions in a way susceptible to the further statistical analysis.

**Aim of the study:** Evaluation of facial expressions of a person with schizophreania utilizing Human Facial Modelling Lab in Polish-Japanese Academy of Information Technology in Bytom.

**Materials and Methods:** A case-study of a patient with schizophrenia, who underwent an evaluation of facial expressions, based on a data provided by a computer reconstruction of his facial expression. Obtained parameters were compared with a healthy volunteer, matched for gender and age.

**Results:** Facial expressions in patient with schizophrenia were weaker than in a healthy volunteer.

**Conclusions:** Human Facial Modelling lab seem to be a credible tool in facial expressions analysis. Results of our study seem to support hypothesis about lowered observable facial expressions in patients with schizophrenia, although further studies on a larger group of patients are necessary.

**Keywords:** HFML; human facial modelling; facial expressions

## IMPLEMENTATION OF THE MOTTEK CAREN SYSTEM IN BEHAVIOURAL THERAPY FOR PATIENTS WITH ANXIETY DISORDERS

Krzysztof Maria Wilczyński

Faculty of Medicine, Medical University of Silesia

Work's tutor: Dr Krzysztof Krysta

Virtual reality exposure therapy (VRET) is becoming a more and more popular treatment method for patients suffering from anxiety disorders. One of the VRET methods, which could be used for this group of patients is MOTTEK CAREN system, however, so far no studies have been published on its implementation in psychiatric disorders.

**Aim of the study:** Assessment of MOTTEK CAREN system usefulness in treatment of anxiety disorders

**Materials and methods:** Presented here is a case of a 45 year old woman suffering from anxiety disorder, who underwent a series of four subsequent trainings with the use of MOTTEK CAREN system repeated once a week. Data from the system was collected on the work of muscles, joints, reactions of the ground, etc. Blood pressure, pulse and salivary cortisol level were measured before and after each training. The level of state and trait anxiety was each time measured with the STAI inventory. All obtained parameters were compared with a control training outcomes.

**Results:** Changes of values of heart rate, blood pressure and salivary cortisol suggest that all trainings were stressful events for the patients, in contradiction to the control session. The gradual decrease in levels of salivary cortisol and anxiety as state after subsequent trainings may be signs of an adaptation to the stressful situation.

**Conclusions:** Trainings with the MOTTEK CAREN system can become a promising treatment for anxiety disorders. Of course in order to draw more credible conclusions our observations must be confirmed on a larger sample of patients.

**Keywords:** MOTTEK KAREN; VRET; Virtual reality treatment

## **JOINT TRACK MEASUREMENT IN PATIENTS WITH MANDIBLE CONDYLE FRACTURE TREATED WITH CONSERVATIVE AND SURGICAL METHODS**

Piotr Stępień Anna Trembaczowska, Mateusz Rogulski

Department and Clinic of Maxillo-Facial Surgery,  
Medical University of Silesia

Work's tutor: lek. dent. Zbigniew Puszczewicz

**Introduction:** Mandible condyle fracture is common injury in facial traumatology. It can be treated with conservative and surgical methods.

**The aim:** The aim of the study is to measure joint track in sagittal plane in patients with mandible condyle fracture treated conservatively and surgically.

**Materials & methods:** Material consist of 90 patients with isolated mandible condyle fracture treated in Maxillo-Facial Surgery Clinic at Medical University of Silesia. Patients are divided into six groups - 20 treated conservatively, 9 treated surgically with intra-articular anastomosis, 13 treated surgically with extra-articular anastomosis, 19 treated with condylectomy, 9 treated with condylectomy and mandible ramus osteotomy, 20 patients without mandible condyle trauma - control group. Joint track was measured with Cadiax Compact 2 six months after treatment.

**Results and conclusion:** Average joint track in control group was 12,71. At patients treated conservatively joint track was average 10,54. Patients treated surgically with extra-articular anastomosis - 9,93, with intra-articular anastomosis - 9,93, with condylectomy - 4,40, with condylectomy and ramus osteotomy - 4,59. Relative to control group joint track was 53% smaller in patients treated surgically and 17% smaller in patients treated conservatively.

**Keywords:** CADIAX, joint track, mandible condyle fracture, surgical and conservative mandible condyle fracture treatment

## CUTANEOUS MANIFESTATIONS OF LUNG CANCER - CASE REPORT

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Work's tutor: Prof. Piotr Dziągpiel

Adenocarcinoma is the predominant histological subtype of the non-small cell lung cancer (NSCLC). Every year is more than 500,000 deaths. In both gender the most common cause of death is lung cancer. Cutaneous metastases from internal malignances are very rarely exception is breast carcinoma. Generally they are misdiagnosed as a benign lesion because of the absence of pathognomonic symptoms. Case report: A 53-years old non- smoker woman was admitted to the hospital with increasing weakness and loss of weight (8 kilograms) in 3 weeks, painful joints and night sweats. Physical examination showed enlarged submandibular, cervical, supraclavicular and left axillary lymph nodes. Additionally presence multiple, immobile and painful lesions in the type of erythema nodosum located on the scalp, back, abdomen. In laboratory tests the Carcinoembryonic antigen (CEA) was 74 times over normal value. Interestingly X- ray, colonoscopy showed no abnormalities only in abdominal ultrasonography subcutaneously several centimeters from navel mixed echoic, round nodule with increased vascularity. Thorax computed tomography (CT) with contrast demonstrated bilateral hilar lymphadenopathy (BHL) lymph nodules enlarged to 33x22 millimeters, the biggest one near trachea. Biopsy of skin lesions was performed, the pathology stated a poorly differentiated (grade 3) metastases from lung adenocarcinoma. This examination completely confirmed recognition of lung cancer. Patient was referred to oncology clinic for further treatment and underwent 2 cycles of chemotherapy. In follow up progressive disease and deterioration in health patient died in the next couple of days.

**Keywords:** skin lesion, lung cancer, non-small lung cancer

## EVALUATION OF AUGMENTATION PROCEDURES EFFECTIVENESS USING CONE BEAM COMPUTED TOMOGRAPHY AND ICATVISION SOFTWARE

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at Medical University of Silesia, Medical University of Silesia

Work's tutor: Dr n.med. Patryk Kownacki

**Introduction:** Bone and soft tissues reconstruction should precede dental implant treatment in most cases. The most common techniques are: GBR/GTR , Alveolar Ridge Splitting, Maxillary sinus lift, Autogenous, allogenic and heterogenous bone graft. The proper technique is used in correlation with alveolar bone loss type, which can be determine by one of known bone defect classifications (ex. Ferrer-Scherrer).

**The aim:** The aim of this research is to evaluate bone density and anatomical conditions for patients before dental implant treatment, proper choice of augmentation procedure and evaluation of its effectiveness after healing period.

**Materials & methods:** To evaluate clinical case properly it is necessary to use CBCT. Research material includes medical records of 8 patients treated at the Department of Dental Surgery and Implantology over the period 2010-2015. After 4-8 months from the augmentation procedure the CBCT examination was made once again to evaluate its effectiveness. Bone volume and radiological density was evaluated. Analysed material was made with computed tomograph General Electrix and volumetric tomograph Gendex CB-500. For measurments of bone volume and density iCATVision software was used. Bone was measured in three dimensions, its density was assessed with Hounsfield scale both prior to the procedure and after it

**Conclusions:** Augmentation procedures was effective in all cases. Proper bone volume and quality dental implant treatment was achieved no matter which augmentation technique was used. The golden standard is autogenous bone block graft procedure which allows to achieve optimal bone volume and quality in a reasonably short period of time

**Keywords:** implantology, augmentation procedures, CBCT

**DIRECT VS CONVENTIONAL BIORESORBABLE VASCULAR SCAFFOLD IMPLANTATION IN PRIMARY PCI. INITIAL DATA FROM A SINGLE CENTER RETROSPECTIVE STUDY**

Michał Węgiel

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Jagiellonian University Medical College

Work's tutor: prof. dr hab. n. med. Dariusz Dudek

**Introduction:** Current guidelines recommend optimal lesion preparation with adequate predilatation before implantation of a bioresorbable vascular scaffold (BVS). On the other hand such aggressive predilatation might increase the risk of distal embolization and subsequent flow disturbances.

**The aim:** The aim of this study was to compare the initial angiographic and clinical outcome of direct and conventional (with predilatation) BVS implantation in acute coronary syndrome (ACS).

**Methods & Materials:** ACS patients with Absorb Everolimus-eluting BVS implantation in primary PCI in years 2013 – 2015. Procedural characteristics, flow disturbances, angiographic and clinical complications were analyzed.  $\alpha$  value of  $<0.05$  was considered to be significant.

**Results:** 93 patients with 114 BVS implanted. 32 (34%) patients had ST-elevation MI, 58 (62%) non ST-elevation MI and 3 (3%) unstable angina. Mean age was  $61 \pm 11$  years. No significant differences in demography and clinical presentation in the direct and conventional groups. The procedure and radiation duration were significantly shorter ( $p=0.003$  and  $p=0.006$ ) and the radiation dose and amount of contrast used were significantly lower ( $p=0.039$  and  $p=0.006$ ) in the direct group. There were no significant differences in obtaining TIMI 3 flow and procedural complications (dissection, distal embolization, side branch occlusion and embolization) in both groups.

**Conclusion:** The results from our work are encouraging for direct BVS implantation in ACS patients.

## THE EFFECT OF LOW-CARBOHYDRATE REDUCING DIET IN PATIENT WITH INSULIN RESISTANCE, OBESITY AND DYSLIPIDEMIA - A CASE STUDY

Małgorzata Słoma, Nicola Szeja, Izabella Krenzel

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

**Introduction:** Insulin resistance is defined as a decrease in tissues sensitivity to insulin, despite its normal or elevated serum level. The phenomenon is observed in patients with obesity and concomitant lipid metabolism disorders.

**The aim:** Evaluation of the effect of the low-carbohydrate reducing diet in a patient with class II obesity, insulin resistance and dyslipidemia.

**Methods & Materials:** The woman at the age of 34 years old (weight 99.4kg, height 1.65m, BMI = 36.5 kg/m<sup>2</sup>) directed to Metabolic Disorders Outpatient Clinic. Laboratory test results has revealed insulin resistance (fasting glucose concentration 89 mg%, insulin 32 mU/l; HOMA-IR: 7.03), and disorders of lipid metabolism (total cholesterol 277mg%, HDL 46 mg%, LDL 174mg%, TG 290mg%). The analysis of body composition revealed whole-body fat content by 44% which corresponds to 10th level of visceral fat. For the period of one month a pharmacotherapy was implemented – metformin 500 mg - along with low-carbohydrate reducing diet.

**Results:** After a month of therapy patient's weight has decreased by 4.6 kg and the visceral fat deposition has been reduced to 9th level. A reduction of insulin resistance was noted (HOMA-IR: 4.91) and in the control analysis of lipids only triglyceride concentrations - 187mg% - exceeded the normal range.

**Conclusions:** A balanced low-carbohydrate reducing diet in combination with a pharmacological treatment is able to provide a significant improvement in glucose and lipid metabolism parameters during the month of use.

**Keywords:** Insulin resistance, obesity, dyslipidemia



## REASONS AND INCIDENCE OF SYNCOPE IN THE TEENS AND YOUNG ADULT POPULATION - PILOT STUDY

Karolina Krupa-Kotara, Nicola Szeja

Department of Cancer Prevention,  
Medical University of Silesia

Work's tutor: Dr n. med. Małgorzata Olejniczak-Nowakowska

**Introduction:** Syncope is defined as a state of short-term loss of consciousness along with a decrease in muscle tone due to insufficient brain hypoxia. It is characterized by rapid onset and spontaneous regression. Syncope is a common symptom and its overall incidence in the general population is around 35%, especially in young people (before 30 years of age).

**The aim:** Assessment of the causes and incidence of syncope in the teens and young adult population.

**Methods & Materials:** The pilot study included 99 middle-aged adults aged  $24 \pm 8.9$  years. Weight loss was found in 17.2%, normal weight in 58.6%, and overweight and / or obesity in 24.2% of respondents. The CAWI method (Computer-Assisted Web Interview) with proprietary, anonymous questionnaire were used.

**Results:** Loss of consciousness was reported by 49.5%, while fainting - 76.8% of respondents. For 12.1% of respondents the episode ended with hospitalization. Among the most common causes of unconsciousness, the subjects were exposed to staying in a stuffy room (39.4%), long-term standing (29.3%) and severe stress (23.4%).

**Conclusions:** 1. In young people syncope occur frequently - at least one episode in lifetime experiences significant part of the population. 2. Syncope, mainly repetitive, may be symptoms of serious illness or injury and require further diagnosis.

**Keywords:** syncope, young people, teens, young adults, fainting, unconsciousness

## ANALYSIS OF THE MOST DISPENSE MEDICAL ADVICES IN FAMILY DOCTOR PRACTICE

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Work's tutor: Prof. Grzegorz Cieślak

**Introduction:** The health benefits in Primary Health Care (PHC) are given to patients who have made a declaration to the unit having signed a contract with the National Health Fund. Benefits shall be provided in an outpatient clinic, and in cases of medically justified also in the patient's home. The main task of the GP is leading the overall and comprehensive care clinic declared for the patient and his family.

**Material and methods:** The study included 510 adults patients (above 18 years) - (228 women and 222 men) who have used the advice of the family doctor with in primary care. The research was carried out by diagnostic survey, using a single questionnaire, by evaluating the percentage reporting concerning age of patients and the reasons for which they signed up to the doctor, taking into account the selected variables. The study was conducted over a period of 6 months.

**Results:** The results were statistically analyzed and showed that the largest group of patients seeking advice were people in age groups: 20-30 years and 50-70 years. Analysis of the reasons for reporting patients to the clinic showed that in both groups of women and men, the most common reason for filing was to rewrite prescriptions for medications taken on a permanent basis (40.3% vs 38.7%), issuing a referral to a specialist (13.5% vs 16.2%) and various types of infections (15.6% vs 13.9%).

**Conclusions:** The largest group of patients presenting to a primary care physician were young people and the age and pre-retirement and the most common reason for reporting patients to the doctor in the clinic POZ visits were associated with prescribing prescription and discharge referrals, as well as various types of infections.

**Keywords:** medical advice, primary health care, medical clinic, the age structure of patients, the cause of medical advice

## **PLATELET RICH PLASMA (PRP) INTRA-ARTICULAR INJECTIONS IN KNEE OSTEOARTHRITIS- EVALUATION OF PATIENTS SATISFACTION AFTER PROCEDURE**

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**Introduction:** Knee osteoarthritis is one of world's leading problems causing chronic pain, limitation of activity and even disability, concerning about 10% of man and 13% of women aged 60 and over. Arthroplasty is a golden standard of treatment in severe changes with very good outcomes but as it is a terminal method many patients prefer to be treated more conservatively, especially in early stages of disease. One of methods with increasing popularity are intra-articular injections of Platelet Rich Plasma.

**The Aim:** Evaluation of patients satisfaction after intra-articular Platelet Rich Plasma injection procedure – is it safe and effective in conservative knee osteoarthritis treatment.

**Materials and methods:** Group of 18 patients ( 4 man, 14 woman, average age- 57 years) with knee osteoarthritis treated with PRP injection was evaluated before and one month after the procedure with VAS score and satisfaction questionnaire describing pain, functions, complications, finished by general 1-10 mark.

**Results:** 67% (13/18) patients were satisfied with the procedure with average 5,6/10 mark. 61% confirmed pain reduction and 56% functions improvement. No patients experienced severe complications. 72% stated they would undergo the procedure again and that they would recommend this method to others.

**Conclusions:** Intra-articular PRP injections might be an effective and safe way of conservative knee osteoarthritis treatment. Majority of patients were satisfied and stated functions improvement and pain reduction one month after procedure.

**Keywords:** knee osteoarthritis, platelet rich plasma, intra-articular injections

## RIGHT VENTRICULAR OUTFLOW TRACT RE-INTERVENTIONS AFTER ROSS PROCEDURE

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Work's tutor: Dr. Romanyuk Alexander

**Introduction:** The Ross procedure (or pulmonary autograft (PA)), has emerged as an attractive option for aortic valve replacement in children and young adults.

**The Aim:** Outline risk factors and define influence on complications of right ventricular outflow tract (RVOT) following Ross procedure.

**Results:** There were 52 re-interventions on neo-pulmonary valve, including 26 (17.2%) endovascular interventions and 26 (17.2%) reoperations. The rates of freedom from re-interventions on neo-pulmonary valve were as follows: 76% (67.8-84%; 95% CI) at 5 years, 65.9% (56.3-75.7%; 95%CI) at 10 years and 63.1% (53-73.2%; 95%CI) at 15 years. Only half of all re-interventions on neo-pulmonary valve were covered with reoperations. Freedom from re-interventions on RVOT were 87.2% (93.1-81.3; 95%CI), 86.5% (92.6-80.4; 95%CI) and 84.3% (91-77.6; 95%CI) at 5, 10 and 15 years, respectively. Endovascular balloon dilatation of the stenotic conduit turned out to be ineffective. The reason for reoperations was a high residual gradient across the conduit. All the PA methods applied showed the occurrence of early dysfunction and need for reoperations to be common when the handmade tricuspid PTFE conduits and xenografts were used.

**Conclusions:** The most important conclusion of the investigation performed is as follows: neither a choice of treatment nor neo-pulmonary valve reconstruction techniques themselves were reliable predictors of RVOT reoperations. A pre-surgical diagnosis (aortic regurgitation, bicuspid aortic valve), a concomitant disease (RVOT obstruction), pre-surgical functional patients' condition were not reliable predictors of frequency of neo-pulmonary artery reoperations either.

**Keywords:** Ross procedure, RVOT re-interventions, Pulmonary autograft.

## THE EFFECTIVENESS OF NUTRITION THERAPY METABOLICALLY OBESE AND NORMAL WEIGHT IN PATIENTS (MONW)

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**Introduction:** People of normal weight with BMI (Body Mass Index) of less than or equal to 25 kg/m<sup>2</sup>, showing the excessive accumulation of fat in the abdominal region and metabolic and biochemical disorders are defined as metabolically obese normal-weight people (MONW).

**The aim:** Identification of the dietary clinic patients showing characteristics of MONW and the effectiveness assessment of nutrition therapy introduced.

**Methods & Materials:** 55 patients of the nutrition clinic took part in the study. MONW diagnosis was made on the basis of the questionnaire developed by Ruderman et al. Evaluation of the fat content in the body was performed by the method of electrical impedance. After half a year of the start of nutrition therapy of MONW the contents of body fat, fasting blood glucose and triglycerides were compared to the results before the nutrition therapy. Statistical analyses were performed at the significance level  $\alpha < 0.05$ .

**Results:** Mean blood glucose levels before nutrition therapy in patients was 132.87 mg/dl (SD  $\pm$  22.36). After the treatment is 103.00 mg / dl (SD  $\pm$  17.64). The average blood glucose in this population before the therapy and after the difference was statistically significantly (p < 0.05). The average level of body fat before the treatment was 24.36 kg (SD  $\pm$  2.35) and after it is 20.79 kg (SD  $\pm$  2.83). The average concentration of adipose tissue is significantly lower (p < 0.05). The mean triglyceride level before the therapy was 169.35 mg / dl (SD  $\pm$  10.43) and after it, 143.00 mg / dl (SD  $\pm$  13.93). Average triglyceride level is significantly lower (p < 0.05).

**Conclusions:** Proper identification of metabolically obese normal weight people allows the implementation of behavioral conduct including a proper diet and physical exercise, which significantly improve the test results and the health state of patients.

**Keywords:** metabolically obese normal-weight, obesity, nutritionist

## **Cancer patients' expectations in respect of the physician-patient relationship**

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**Introduction:** The evaluation of expectations of patients is one of the elements of evaluation of patient's satisfaction from the received medical services. The degree to which these expectations are met determinates the level of patient's motivation to complete doctor's orders and undertake actions aiming the diagnostic and therapeutic process.

**The aim:** The aim of this study was to analyse expectations that patients with cancer have from their doctors.

**Materials and methods:** 107 patients with cancer were qualified to this research. 53 of them received chemotherapy and 54- radiotherapy. The research tool was a structured questionnaire which included information on sociodemographic data and an expectation test prepared by professor Golzweig's team.

**Results:** Most frequently declared expectations were: possibility to trust a doctor (67%) and to explain the treatment plan (63%). Expectations were studied with a cluster analysis. Two groups were selected. First of them were patients with a higher expectation level ( $n = 47$ ), and second - patients with lower expectation level from their doctors ( $n = 53$ ). Higher expectations were essentially more often declared by women, who were 62.5% of respondents in the first group,  $p = 0.003$ . An important, monotonic relation was observed between level of education and higher expectations ( $p = 0.02$ ).

**Conclusions:** Patients treated oncologically expect emotional support and full information about their illness and treatment from their doctors. The higher level of expectations was declared by women and both sexes with higher education.

**Keywords:** patients expectations; physician-patient relations; cancer patients

## IMPACT OF DRY NEEDLING TO IMPROVE RANGE OF MOTION AND REDUCE PAIN IN PATIENTS WITH A DISEASE "HEEL SPURS"

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**Objective:** The aim of this study was to evaluate the effect of dry needling to reduce the pain in people with inflammation of the plantar fascia.

**Material and Methods:** The study involved 47 patients 23 men and 24 women aged  $39 \pm 4.4$  diagnosed with inflammation of the plantar fascia. In each test before the treatment was measured range of motion in the ankle joint, measuring pain VAS during the loading of the lower limb, pain measurement at selected points within the plantar fascia and gastrosoleus and research play within the articular ankle. Then, each subject performed 10 procedures dry needling within the plantar fascia and triceps randomly selected points. After treatment, a series of tests repeated again. The results provided in the database, and then subjected to statistical analysis using the Statistica software.

**Results:** The average range of dorsiflexion before treatment was 4.7 degrees while on therapy 12,7. Average range plantar flexion before therapy was 39.1 and after treatment 47,4. Average range of pain during the loading of the lower limb prior to treatment was 7.7 and after treatment of 2.2.

**Conclusions:** Dry needling reduces pain and improvement in movement in patients with inflammation of the plantar fascia. Perform further research on a larger group of probands.

**Keywords:** dry needling, inflammation of plantar fascia

## **THE IMPACT OF DRY NEEDLING POSTISOMETRIC RELAXATION AND RECIPROCAL INHIBITION TO IMPROVE THE RANGE OF MOTION IN PATIENTS WITH LIMITED RANGE OF MOTION**

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The aim of the work is to influence postisometric relaxation, reciprocal inhibition, and dry needling on the range of motion of rotation in patients with subacromial impingement syndrome. **Material and Method** The study involved 64 patients with carpal impingement 24 men and 40 women aged  $x = 43 \pm 5,7$ . Each of the test was made after the interview examination was study physiotherapy. Each of respondents had made before a visit to the physiotherapist ultrasound examination in which the doctor assessed size space subacromial. Study group divided into 3 group. In group A in addition to a standard therapy used technique for muscle relaxation postisometric cone rotatorow. In group B in addition to a standard therapy used reciprocal inhibition on muscle cone rotatorow. In group C in addition to a standard therapy used dry needling muscle rotator cuff. Therapy lasted every day for 10 days. Again physiotherapy examination was performed and the results placed in a database and analyzed statistically. The results of prior therapy the median range of motion of the rotation of the outer group amounted to A-58, B-56, C-58, the treatment group A-64, B-65, C-70. The results of prior therapy the median range of motion of internal rotation rate in group A-54, B-55, C-57, the treatment group A-71, B-69, C-72 **Conclusions** In each group was observed increase the range of motion. Most increase range of motion occurred after using a dry needling technique.

**Keywords:** postisometric relaxation, reciprocal inhibition, dry needling



## **SYNCOPE IN YOUNG PATIENTS - THE PROBLEM OF CHILDHOOD OR ADOLESCENCE?**

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Work's tutor: dr hab. n. med. Grażyna Markiewicz – Łoskot

**Introduction:** SYNCOPE CAUSED BY A DECREASE IN CEREBRAL PERFUSION IS A RELATIVELY COMMON CLINICAL PROBLEM. VASOVAGAL SYNCOPES REPRESENT APPROXIMATELY 30-40% OF SYNCOPE OF UNCLEAR ORIGIN AND ARE THE MOST COMMON TYPE OCCURRING IN CHILDREN (75-80%).

**The aim of the study:** IS TO EVALUATE THE INCIDENCE OF TRANSIENT LOSS OF CONSCIOUSNESS IN CHILDREN AND ADOLESCENTS IN THE FOUR-YEAR FOLLOW-UP.

**Materials & Methods:** RESEARCH MATERIAL WAS OBTAINED FROM MEDICAL RECORDS BY DIAGNOSIS OF THE R-55, IN PATIENTS HOSPITALIZED IN THE CLINIC OF PEDIATRIC CARDIOLOGY GCZDZ IN KATOWICE 2013-2016.

**Results:** OVER THE LAST FOUR YEARS SYNCOPE ACCOUNTED FOR 11.82% AMONG ALL THE HOSPITALIZED CHILDREN IN THE DEPARTMENT OF PEDIATRIC CARDIOLOGY. VASOVAGAL SYNCOPE CONSTITUTED 99.51% OF ALL SYNCOPES AND WERE THE MOST COMMON IN FEMALE PATIENTS (66.46%).

**Conclusion:** VASOVAGAL SYNCOPE ARE THE MOST COMMON CAUSE OF SYNCOPES AMONG PEDIATRIC PATIENTS AND IN THE CASE OF CONVERSION TREATMENT REQUIRES SPECIALIZED DIAGNOSTICS. THEY CAN OCCUR IN DIFFERENT AGES BUT USUALLY RELATE TO YOUNG PEOPLE DURING PUBERTY.

**Keywords:** Vasovagal syncopes, transient loss of consciousness, adolescence,

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## **SESSION OF DOCTORAL SCIENCE MEDICINE**

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## THE RELATIONSHIP BETWEEN OXYGEN CAPACITY IN DIFFERENT LEAGUES PRELIMINARY RESEARCH

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**Admission:** Beep test, norwegian running test is very easy and pretty objective test which checking the strength of the players. This test allows you to measure your oxygen capacity. The parameter that we count on during the test is the distance traveled by the athlete, and the result is the last completed level.

**Aim of study:** The aim of the study was to evaluate the relationship between oxygen capacity and leagues played by football players.

**Methods & Materials:** Beep test was used to evaluate the oxygen capacity of the players. The tests were conducted in the spring round in 2016 on a group of 60 soccer players playing in different leagues: : IV ligue Ruch Radzionków, III ligue Szombierki Bytom, II ligue Raków Częstochowa and I ligue Rozwój Katowice.

**Results:** IV ligue Beep test  $\bar{X} = 13,33; \pm SD= 0,96$  III ligue Beep test  $\bar{X} = 13,04; \pm SD= 1,17$  II ligue Beep test  $\bar{X} = 11,3; \pm SD= 1,18$  I ligue Beep test  $\bar{X} = 12,4; \pm SD= 0,84$

**Conclusions:** The level of oxygen capacity is not dependent on the league in which the players play. In the I league the difference between the test results of the players is reduced.

**Keywords:** beep test, oxygen capacity, ligues

## SERUM CATHELICIDIN LL-37 AND VITAMIN D LEVELS IN PATIENTS WITH ACTIVE TUBERCULOSIS

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**Introduction:** Tuberculosis (TB) is a global burden infectious disease and remains one of the most valid causes of morbidity and mortality in the world. A third of the world's population is currently infected with *Mycobacterium tuberculosis* (Mtb), the causative agent of TB. Clearance of this disease is intractable since Mtb is an intracellular pathogen which has developed mechanisms to survive inside host macrophages. A growing body of evidence concerning the role of small amphipathic molecules, such as cathelicidins, in host defense and immunological processes. Recent studies provided observations that vitamin D regulate the expression of cathelicidin LL-37 but little information is available on the relation between LL-37 and vitamin D concentrations in patients with pulmonary TB.

**Aim:** The aim of this study was to estimate LL-37 and vitamin D concentrations in the serum of TB patients and compare them with healthy individuals.

**Materials & methods:** We measured vitamin D and LL-37 concentrations in 47 serum specimens from patients with pulmonary TB and 41 healthy controls without TB. LL-37 and vitamin D levels were determined by ELISA method.

**Results:** In patients with TB mean LL-37 was 7.45 ng/ml and vitamin D was 24.18 ng/ml. Mean LL-37 and vitamin D in healthy individuals was 1.41 ng/ml and 26.10 ng/ml, respectively. Serum concentration of LL-37 was significantly higher in TB patients than in healthy individual since there were no statistically significant changes in vitamin D levels. Serum vitamin D did not correlate with serum LL-37 concentrations.

**Conclusions:** No relation between vitamin D level and serum concentrations of LL-37, peptide synthesized in a vitamin D–dependent manner, was observed.

**Keywords:** schizophrenia; LL-37; cathelicidins; mental disorders

## LL-37 SERUM LEVELS IN SCHIZOPHRENIC PATIENTS

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**Introduction:** Schizophrenia is a chronic mental disorder that affects more than 21 million people worldwide and typified by cognitive dysfunction. The biological mechanism of schizophrenia remains unclear; however, many authors indicate the cause of this disease include genetic factors and abnormalities in the brain's chemistry or structure. Recent studies appear to suggest that schizophrenia may also be triggered by environmental events, such as infections or immune disorders. Human cathelicidin (LL-37) has been elucidated as a modulator of the immune system. A growing body of evidence suggests an important role for LL-37 in mounting appropriate innate and adaptive immune responses.

**Aim:** The aim of this study was to estimate LL-37 concentrations in the serum of schizophrenic patients and compare them with matched healthy individuals.

**Materials & methods:** 47 patients with schizophrenia and 30 healthy controls without schizophrenia and without any family history of psychotic disorders were included in this study. Individuals with active inflammatory or infectious disease were excluded by their comorbidities, clinical symptoms, and body temperatures. Serum LL-37 levels were determined with the enzyme-linked immunosorbent assay method.

**Results:** Mean circulating cathelicidin in healthy volunteers was 1.83 ng/ml (0.69 – 11.81 ng/ml). In patients with schizophrenia mean serum LL-37 was 1.06 ng/ml (0.3 – 9.42 ng/ml). Serum concentration of LL-37 was significantly lower ( $p < 0.001$ ) in schizophrenic patients than in healthy individuals.

**Conclusions:** The low LL-37 level may be associated with changes in reactivity and impairment of immune system in patients with schizophrenia.

## ANTIPROLIFERATIVE, CYTOTOXIC AND PROAPOPTOTIC EFFECTS OF PTEROSTILBENE ON HUMAN SKIN MELANOMA CELLS

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Melanoma is the most aggressive skin cancer with a high mortality rate and constantly increasing incidence. The majority of metastatic melanomas are resistant to diverse chemotherapeutic agents. Therefore, there is a growing interest in identifying new therapeutical agents. Pterostilbene is a natural stilbene that has been found to have diverse pharmacologic activities including anticancer potential. The aim of this study was to evaluate the antiproliferative, cytotoxic and proapoptotic influence of pterostilbene on human melanotic and amelanotic melanoma cells. A2058 and C32 melanoma cells were cultured using standard techniques and treated with varying doses of pterostilbene (2,5-60  $\mu\text{M}$ ) for a various period of time. Cell proliferation analysis was performed by using a BrdU assay. The cytotoxicity of pterostilbene was evaluated by LDH assay and its apoptosis inducing ability was determined by analyzing caspase 3 activity. Pterostilbene caused dose-dependent suppressive effect on proliferation of A2058 and C32 cells. At low concentrations, it did not influence cell proliferation. Higher concentrations of pterostilbene ( $15 \mu\text{M}$ ) significantly decreased cell growth. Data obtained from LDH assay indicated that pterostilbene had dose- and time-dependent cytotoxic effect on both melanoma cell lines. Pterostilbene induced caspase-dependent apoptosis only in human amelanotic melanoma cells. The results demonstrated the antiproliferative, cytotoxic and proapoptotic properties of pterostilbene in a wide range of concentrations on human melanoma cells. Hence, it can be suggested that pterostilbene could be considered as a potential chemotherapeutic agent for the treatment of melanoma.

**Keywords:** pterostilbene, melanoma

## **EVALUATION OF IL-18 AND INTERLEUKIN-18 BINDING PROTEIN (IL-18BP) AS POSSIBLE BIOMARKERS OF LATENT MYCOBACTERIUM TUBERCULOSIS INFECTION**

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**Introduction:** According to the estimates of the WHO, over 1/3 of the human population is infected with *Mycobacterium tuberculosis* (M.tb). The infections are latent but in approximately 10% of people they can progress into active tuberculosis (TB). The development of active TB is based on immune-driven mechanisms involving cytokines such as interleukin-18 (IL-18).

**The aim:** The aim of the study was the evaluation of IL-18, interleukin-18 binding protein (IL-18BP) and free IL-18 levels in serum from healthy volunteers with or without latent M.tb infection.

**Materials & Methods:** The study group comprised of 145 adult Polish volunteers including medical personnel working at the Regional Center Hospital for Tuberculosis, Lung Diseases and Rehabilitation in Tuszyn (Poland), 46 healthy volunteers without any known M.tb exposure and 41 relatives of TB active patients. On the basis of the result of the interferon-gamma released assay all investigated subjects were considered individuals with (IGRA(+)) or without (IGRA(-)) latent M.tb infection. IL-18 and IL-18BP concentrations were determined immunoenzymatically using DuoSet®ELISA Development Kits (R&D).

**Results:** The study showed no statistically significant differences in the levels of secreted IL-18, IL-18BP and free IL-18 within the studied groups, however demonstrated slightly higher concentrations of IL-18 and IL-18BP in the sera from IGRA(-) individuals.

**Conclusion:** None of the studied proteins is able to differentiate between M.tb infected and non-infected individuals suggesting that they cannot be considered as specific biomarkers of latent M.tb infection. Supported: Grant MNiSW 2015/19/N/NZ6/01385

**Keywords:** *Mycobacterium tuberculosis* infection, latent, IL-18, IL-18BP



## EVALUATION OF PROLIFERATION AND OSTEOGENIC DIFFERENTIATION ABILITY OF ADIPOSE DERIVED STEM CELLS (ADSCS) IN PATIENTS WITH TYPE 2 DIABETES

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**Introduction:** Adipose tissue is rich source of mesenchymal stem cells (MSCs) Those stem cells (SC) have capability to differentiate into mesodermal germ layer for example osteoblasts. They can be used successfully in regenerative medicine of bone damage but the potential of differentiation must be high. In some reason mesenchymal stem cells have lower differentiation ability for example in patients with metabolic diseases. **Aim:** The aim of the study was to investigate the effect of diabetes on proliferation and differentiation of mesenchymal stem cells from patients treated with metformin.

**Materials & methods:** 12 patients were divided into two groups: DM-patients with type 2 diabetes and C-control patients selected for the study. ADSCs (adipose tissue derived stem cells) were routinely maintained in DMEM medium supplemented with fetal bovine serum amphotericin B and penicillin-streptomycin complex. The ADSCs used for the experiment were at 2nd passage. Human Mesenchymal Stem Cell Marker Verification Multi-Color Flow Cytometry Kit was used to confirm the phenotype of ADSCs. For the differentiation experiment the medium was replaced with fresh DMEM with L-ascorbic acid 2-phosphate, dexamethasone and  $\beta$ -Glycerophosphate. Cells were cultured in the mentioned media for another 7, 14 and 21 days. Alizarin red S staining was used to evaluate calcium deposits in the cell cultures. Detection of the mRNAs expression was carried out using a real time RT-qPCR technique with SYBR Green chemistry.

**Results and conclusion:** This study demonstrated that cells from patients with diabetes differ from healthy patients in depend on methods and time of osteogenic differentiation in vitro.

**Keywords:** mesenchymal stem cells, diabetes type 2, osteogenesis

## FIRST TRIAL OF ADIPOSE DERIVED STEM CELLS DIFFERENTIATION INTO CORNEAL EPITHELIUM BY THE INFLUENCE OF PORCINE LIMBUS MICROENVIRONMENT

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**Introduction:** Stem cells are successfully used in regenerative medicine in few therapies. All stem cells can be classified into groups selected by the properties. We can recognize unipotent stem cells, multipotent, pluripotent, which all of them presents unique capability of differentiation into random tissues. ADSC (adipose derived stem cells) are multipotential and can differentiate into all mesodermal tissues. However, there are few reports that mesenchymal stem cells are able to differentiate into corneal epithelium.

**Aim:** Differentiation of ADSC into the corneal epithelium after co-culture with porcine limbus and porcine limbal epithelial stem cells (pLESC)

**Materials & Methods:** We used the commercial primary cell line of ADSC (Lonza) and primary culture of porcine LESC obtained by explant cultivation. ADSC were seeded into 6 well plates in inserts with pores (diameter 0,4  $\mu\text{m}$ ). Another dish was used for pLESC. We combined the culture together after 2 days. The tRNA was extracted after 14 days of coculture. After that the RTqPCR was performed to evaluate the expression of characteristic markers.

**Results:** We noticed that the expression of characteristic genes was altered after coculture with the statistical significance ( $p < 0,05$ ).

**Conclusion:** We conclude that the porcine limbus microenvironment has the ability to induce the differentiation of ADSC and change the expression of molecular markers characteristic for the corneal epithelial cells.

**Keywords:** ADSC, coculture, LSCD, cornea, regeneration

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## **SESSION OF BIOTECHNOLOGY AND GENETICS**

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## **Statins and prostate cancer (PC): Role of 3-hydroxy-3-methyl-glutaryl-coenzyme A reductase (HMG-CoAR) inhibition in the angiogenesis process**

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Angiogenesis is a leading factor in malignant progression in many tumors including the PC. Vascular endothelial growth factor receptor 2 (VEGFR2) is necessary in this process. Stimulation of VEGFR2 during angiogenesis leads to multiple downstream kinase pathways activation including Akt, Src, FAK, p38, and Erk1/2. Subsequently pathologic vessels supply blood to the lesion and allow it to metastasize. Statins, HMG-CoAR antagonists although used in different manner present inhibitory effect on this process through many ways listed above.

The aim of our study was to check if the mevalonate metabolism block done by the use of statins can decelerate tumor growth and reduce the risk of PC's metastasis and angiogenesis.

Study was carried out on human normal and cancer cell lines. Cytotoxicity analysis, cell proliferation assay, siRNA constructs (Ambion), Western blotting and RT-PCR techniques were used to investigate the impact of statins on the metabolism of VEGF, VEGFR2, FAK, Src, p38, AKT and AR's expression in cells. We obtained results that indicate dose-dependent effects of statins on cells' metabolism.

Silencing of HMG-CoAR significantly (depending on the type of cells) reduced proliferation, cell migration, downregulated VEGFR2 and AKT phosphorylation and upregulated the expression of caspase-3, -9 as well as cell cycle inhibitors p21, p27.

The results prove that statins vastly influence all - the proliferation, angiogenesis and the metastatic potential of the human PC cells. Such conclusion encourages to the further investigation of the mevalonate metabolism pathway and gives hope for the statins to be once successfully used in the prostate cancer treatment.

**Keywords: Angiogenesis, prostate cancer, statins, androgen receptor, 3-hydroxy-3-methyl-glutaryl-coenzyme A reductase (HMGCoAR), VEGF**

## Effect of amigdalín on Colo-829 melanoma cells in vitro

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Amigdalín is commonly found in seeds of edible fruits, bitter almonds and certain legumes. The effects of amigdalín on the inhibition of growth and proliferation of many types of cancer cells in vitro have been reported. Also apoptosis have been observed in cancer cells treated with amigdalín in vitro.

The aim of the study was to evaluate the effects of amigdalín on the survival and proliferation of Colo-829 melanoma cells in vitro and to evaluate the changes of pro-apoptotic proteins as Bax, caspase-3 and anti-apoptotic Bcl-2 protein at transcription level in melanoma cells treated with low dose of amygdalin.

Melanoma cell (Colo-829) and normal fibroblasts (HFF-1) – the control - were cultured in an adequate media (Colo-829 in RMPI; HFF-1 in DMEM) in a CO<sub>2</sub> incubator. Cells were seeded onto 96-well plates (3,000 cells /well) and incubated for 24h in an incubator. Next, cells were treated with amigdalín at concentrations of 5, 10, 15, 20, 30, 50, 80 mg/ml of medium and incubated for 48 hours. Cell proliferation and survival assays were performed using WST-1 (Roche), CVDE (Xenometrix) and LDH (Roche) tests. Subsequently, the cells were seeded into 25cm<sup>2</sup> T-flask at a density of 300,000 cells/5 ml of medium and incubated in a CO<sub>2</sub> incubator for 24 hours. Next, cells were treated with amigdalín solution (5 mg/ml of medium) and incubated for 48 hours under appropriate conditions. The extracted RNA were used in the RT-qPCR analysis.

The dose-dependent effect of amigdalín on the survival and proliferation of melanoma cells and normal human dermal fibroblasts in vitro was noted. Also changes of mRNA levels of Bax, caspase-3 and Bcl-2 genes were observed.

**Keywords: amigdalín, melanoma**

## **The effect of juglone on p53 and p21 expression on transcription level in melanoma cells of Colo-829 line and in normal human dermal fibroblasts of HFF-1 line in vitro**

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Juglone is a natural phytochemical aromatic compound produced by the trees that belong to the juglandaceae family. It is a derivative of naphthoquinone and its synthesis takes place in all parts of the plant. Due to its cytotoxic and genotoxic properties it is suggested that juglone is a promising inhibitor of cancer cells growth as well as an effective therapeutic agent. Probably, juglone inhibits cell cycle, stimulates apoptosis or necrosis, induces oxidative stress, damages cell membranes and causes chromosomes breaking in cancer cells.

The aim of the study was to evaluate the effect of juglone on p53 and p21 expression on transcription level in melanoma cells of Colo-829 line and in normal human dermal fibroblasts of HFF-1 line in vitro.

The Colo-829 and HFF-1 cells (ATTC) were cultured in an adequate medium (Colo-828 cells in RPMI and HFF-1 cells in DMEM) at 37°C in humidified air containing 5% CO<sub>2</sub>. For experiments, approximately 300 000 cells/were seeded onto 25 cm<sup>2</sup> T-flasks and then allowed to grow for 24h. Cell cultures were treated with juglone solution (Sigma-Aldrich) in concentration of 25 µM and incubated for 48h in standard condition. The RT-qPCR technique was used to evaluate the influence of juglone on p53 and p21 mRNA expression.

Both, in melanoma and normal cell cultures, the effect of juglone at 25 µM concentration on expression of p53 and p21 at mRNA levels was noted.

**Keywords: juglone, p53, p21, melanoma**

## **Endogenous beta-galactosidase as a marker of cellular senescence in cells exposed to xanthone treatment**

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Cellular senescence is a phenomenon which plays crucial role in the suppression of cell division. It is known that cells can become senescent as a result of destructive action of reactive oxygen species (ROS). Generation of ROS is a physiological result of endogenous processes but can also be induced via the exposition to various agents. Xanthone derivatives are a wide group of compounds that perform many biological activities, including anticancer action mediated by mechanisms that are not fully explained.

In our study we aimed to estimate whether xanthone derivatives are able to induce senescence in cultured cells.

The analyzed compounds were two natural xanthenes ( $\alpha$ -mangostin, gambogic acid) and four xanthone derivatives synthesized at the Dept. of Bioorganic Chemistry, CMUJ (Kraków). The experiment was conducted on normal (C3H/10T1/2) and genetically modified mouse fibroblasts (cell line established and characterized by Dr. Tomasz Loch, Dept. of Biotechnology and Genetic Eng.). Cultured cells were treated with above-mentioned compounds and then measurement of senescence-associated  $\beta$ -galactosidase (SA- $\beta$ -gal) activity was performed. Increased numbers of SA- $\beta$ -gal positive cells were observed in both cell lines as a consequence of oxidative stress induction. However, in genetically modified fibroblasts the deleterious effect of ROS generation was significantly reduced due to the overexpression of manganese-dependent superoxide dismutase (MnSOD), which subsequently led to decrease in SA- $\beta$ -gal positive cells.

Obtained results suggest that xanthone derivatives induce oxidative stress and cellular senescence which constitutes a significant part of their anticancer properties.

**Keywords:** reactive oxygen species, xanthone derivatives, cellular senescence, senescence-associated  $\beta$ -galactosidase



## Effect of hypothermia on doxorubicin induced oxidative stress and apoptosis

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Reactive oxygen species (ROS) are generated during mitochondrial oxidative metabolism, as well as in cellular response to xenobiotics, cytokines and bacterial invasion. Oxidative stress occurs as a consequence of excessive ROS production over the capability of the cell to mount an effective antioxidant response. It results in macromolecular damage and is implicated in aging, cancer and neurodegeneration. Hypothermia (HT) is a condition in which core temperature drops below physiological range. Therapeutic HT is used in a number of medical procedures. Its beneficial effects have been shown mainly in transplantology, cardio- and neurosurgery.

The aim of the study was to investigate the effect of mild hypothermia on oxidative stress and apoptosis induced by doxorubicin in HeLa cells.

Oxidative stress was induced in HeLa cell line by treatment with doxorubicin for up to 72 hrs. Cells were cultured in normothermic (37°C) and hypothermic (33°C) conditions. Temporal changes in cellular ROS level were visualized by staining with fluorescent probe DCF (2',7'-dichlorodihydrofluorescein diacetate). Quantitative measurements of DCF-stained ROS were performed by computer analysis of images captured with fluorescence microscope. Assessment of apoptosis was done by DAPI staining nuclei.

Hypothermia showed lower level of ROS in HeLa cells treated with doxorubicin in a specific time range as compared to the cells incubated with doxorubicin in normothermic conditions. Additionally, onset of doxorubicin-induced apoptosis was delayed in cells grown at 33°C.

Mild hypothermia has potentially preventive effect on doxorubicin generated ROS in HeLa cells.

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

## **Invasiveness of glioblastoma multiforme cell lines U87MG T98G the muted gene miR148 and miR210.**

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Glioblastoma multiforme (GBM) - one of the most common and most malignant brain tumors, is highly invasive and resistant to treatment. Invasiveness of GBM significantly depend on e.g. the activity of matrix metalloproteinases (MMPs - in particular MMP-2, MMP-9, MMP-13, MMP-7, MMP-12 and MMP-20). It was also shown the important role of VEGF and VEGFR2, cathepsins (e.g. Cathepsin D) and HIF-1A. The altered expression of miRNAs is also affect the invasiveness of glioblastoma multiforme cell. Increased expression of miR148 and miR210 was detected in GBM cells.

The aim of the study was to assess the effect of gene miR148 and miR210 silencing on expression of selected matrix metalloproteinases, cathepsin D and HIF-1A in T98G and U87MG cells.

Cell line T98G and U87MG cells were grown in EMEM + 10% FBS (temp. 37<sup>o</sup>C, 5% CO<sub>2</sub> atmosphere), and were transfected with siRNA specific for a miR148 and miR210 (0.25nM, 48h). After 48 hours from the transfection, RNA was extracted from GBM cells and the copy number of mRNA of the analyzed genes were determined using SYBR SensiFAST HI-ROX One-Step Kit and specific primers. Comparison of expression profiles of gene expression was performed between transfected and untransfected cells.

We have found changes of gene expression connected with reduction of invasiveness between utransfected and transfected cells of glioblastoma multiforme.

Knockdown of miR148 and miR210 gene in glioblastoma multiforme cells may be a potential new strategy for controlling their invasiveness.

**Keywords: glioblastoma multoforme, siRNA, miR148, miR210, invasiveness**

## **The influence of celastrol on the viability and proliferative potential of glioblastoma multiforme U87MG cell line with knockdown of miR148 gene**

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Glioblastoma multiforme is one of the most malignant, and the most common brain tumor, characterized by invasive growth, intensive migration and rapid spread within the nervous tissue. Newly diagnosed patients usually live less than 18 months.

This study was designed to determine whether and how methylglyoxal (MEG) affects the viability, the proliferation and apoptosis of GBM U87MG and T98G cell lines.

Available data indicate that an important role in the regulation of more than 60% of human genes: oncogenes, tumor suppressor genes and genes related to chemoresistance plays miRNA. In turn, celastrol (CEL) is one of the known compounds having potential anti-tumor activity. Given the above objective of this study was to determine the effect on the viability and proliferative potential of glioblastoma multiforme cells after knockdown of miR148 gene.

U87MG glioblastoma multiforme cells were transfected with 0.25nM siRNA specific for a miR148 gene, and 48h after transfection cells were exposed to celastrol (1mM, 24h). As a control, untransfected cells were used. The effect on the viability, proliferation (proliferative index), the cell cycle (flow cytometry) and apoptosis of transfected and untransfected cells were analyzed.

Celastrol reduce the viability and proliferation of glioblastoma cell line U87MG. It was also observed an increase in the percentage of cell population of sub-G1 and decrease the percentage of cells in S and G2/M phases of cell cycle and induction of apoptosis. All observed changes were more significant after knockdown of miR148 gene. The combination of CEL with miR148 gene silencing may be a potential, new therapeutic strategy to control the growth of human glioblastoma multiforme cells.

**Keywords: glioblastoma multiforme, siRNA, proliferation, vitality**

## **Influence of new xanthone derivatives on the in vitro migration potential of Caco-2 and HT-29 cancer cells**

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Natural xanthenes are heterocyclic compounds produced as secondary metabolites mostly by tropical plants. Pharmacological analyses revealed their pleiotropic biological activity. Some xanthenes perform antiproliferative effect in cancer cell cultures which makes them potentially valuable in the chemotherapy. This prompted many researchers to chemical synthesis of novel xanthone derivatives to screen for the new potent drugs in cancer.

The aim of our study was to investigate the influence of new xanthone derivatives on the migration of cancer cells in vitro.

Four synthetic and two natural xanthenes (gambogic acid and  $\alpha$ -mangostin) were tested on HT-29 and Caco-2 (colorectal adenocarcinoma) cell cultures. Synthetic xanthenes were obtained from the Dept. of Bioorganic Chemistry of the Jagiellonian University. For migration assessment in vitro wound healing assay was used. Expression of genes involved in migration processes (matrix metalloproteinases MMP-2 and MMP-9, TIMP1, ICAM-1, VCAM-1, VEGF) was estimated by Real-Time™ RT-PCR. All analyses were performed at non-cytotoxic concentrations.

All compounds efficiently decreased migration in the in vitro wound healing (scratch) assay, especially in HT-29 cultures. The most active natural xanthone in both cell types was gambogic acid. The synthetic xanthenes also efficiently reduced migration (the strongest effect was performed by comp. 2).

Molecular analysis revealed that expression of genes involved in migration significantly changed in cultures treated with xanthenes. These results suggest that apart from the direct antiproliferative influence, xanthone derivatives also significantly reduce migration potential of cancer cells.

**Keywords: cancer, xanthenes, cell migration**

## **Culture conditions and characteristic of cells isolated from abdominal aortic aneurysms**

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Abdominal aortic aneurysm (AAA) is defined as dilation of the abdominal aorta over 3 cm, localized below the renal arteries. The consequence of enlargement might be a damage of wall structure and aortic rupture. AAAs are more common in men than in women with the onset usually between 40 and 75 years of age. AAA is very hard to detect disease because it is asymptomatic and therefore in many patients it leads to death. The diagnosis of AAAs is a big challenge, because it's a multifactorial disease. Degradation of the aortic wall structure is caused by degradation of its ECM, development of progressive inflammation, oxidative stress, as well as, genetics and environmental factors.

The aim of the study was to standardize the cell culture methods for cells obtained from AAA specimens and determination of the phenotypes of these cells to comparison with control cells.

The material was specimens of aortic wall obtained from patients with AAA after surgical treatment. These specimens were routinely discarded according to standard procedures. Cells were isolated from an interior, external and median layer of abdominal aortic wall of patients with AAA and were cultured in an appropriate standard media. Subsequently, the cell cultures were analyzed by flow cytometry, immunochemistry and macroscopic methods.

The results showed that the phenotype of isolated cells from patients with AAA were different from the phenotype of control cells. Cells isolated from the internal wall from patients with AAA do not express markers characteristic for this layer. In most patients, a large percentage of cells possess antigen CD90, which is observed in each of the layers.

**Keywords: abdominal aortic aneurysms, cell culture**

## **Influence of different antibiotics on adipose derived stem cells in vitro conditions**

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Adipose tissue is a source of mesenchymal stem cells. Its ability to differentiate and the regeneration potential can be limited by cell culture. During experiments with stem cells from adipose tissue generally we have to proliferate them and induce a differentiation process. Antibiotics are usually added to the medium to avoid contamination in the in vitro culture. Additionally during transplantation, antibiotics are also needed.

The aim of the study was to evaluate the influence of amphotericin B (AmB), penicillin-streptomycin complex (PS), AmB complexed with copper(II) ions (AmB-Cu<sup>2+</sup>) and different combination of it on proliferation and differentiation of adipose derived stem cells.

Normal human adipose derived stem cells (ADSCs, Lonza) were routinely maintained in DMEM the medium supplemented with fetal bovine serum (FBS) without antibiotics at 37 °C in a 5% CO<sub>2</sub> incubator. The ADSCs used for the experiment were at 2nd passage. The cells were seeded in 96 well plates and cultivated for 24h, 48h, 72h with different antibiotics. The culture of ADSCs without any addition of antibiotics was used as a control. The effect on proliferation was analyzed by MTT and Sulforhodamine B assays. Simultaneously, cells were also treated with AmB-PS, AmB-Cu<sup>2+</sup>-PS solutions on 12 well plates with the control group without antibiotics to assess the induction of differentiation. The differentiation was evaluated with Alizarin red staining, to assess the osteogenesis and Oil red O staining to evaluate the induction of adipogenesis.

The results obtained in the experiment indicate the influence of the antibiotics on the adipose derived stem cells in depend on time and the combination of used compounds.

**Keywords: stem cells, antibiotics, amphotericin B**

INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF GENERAL SURGERY**

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## **Effect of duodeno-jejunal omega switch (DJOS) surgery on body mass and lipid accumulation in the liver in regard with type of diet in Sprague-Dawley rats.**

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High Fat Diet in rats has a negative influence on GLP1-receptors expression, causing nonalcoholic fatty liver disease. Increased GLP-1 levels after surgery and presence of GLP-1 activate the genes involved in fatty acid  $\beta$ -oxidation and insulin sensitivity.

The aim of the study was to assess effect of DJOS surgery on body mass and lipid accumulation in the liver in regard with type of diet in SD rats.

SD rats (n= 22) seven-week old male were randomly assigned to the 2 groups. First one (n=10) was on HFD for one month and the other one (DK) was fed a normal chow diet. After this period both groups underwent DJOS or SHAM surgery. Histology analysis of liver tissues were analyzed by TEM. In order to indirect quantification of fat content, obtained images were analyzed statistically. From each photograph total surface of the all fat droplets were calculated with respect to whole visible tissue area. Body weight was measured before and after surgery. Liver samples from both HFD/HFD groups were analyzed in TEM, and for statistical analysis the surface of lipid droplets on pictures was calculated. Samples from the DJOS group presented with single small lipid droplets in hepatocytes, while liver tissue from SHAM animals had many droplets of various sizes.

There were significant body weight differences between surgery types in HFD/CD and HFD/HFD diet configurations. CD/CD and CD/HFD groups didn't show such differences.

In short term DJOS surgery was found not to reduce body weight in the studied groups. Despite this fact DJOS leads to improvement of lipid homeostasis. This type of surgery prevents lipid accumulation in the liver for HFD/HFD groups without hyperplasia changes in hepatic tissue ultrastructure.

**Keywords: duodeno-jejunal surgery, body mass, lipids accumulation**

## **The evaluation of justification of head CT scan in children according to PTChD and AAP guidelines.**

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Head trauma is one of the most common reason for admission to the Child Surgical Emergency Room. The management of those cases varies.

The aim of the study was to evaluate the justification of Computer Tomography in patients between 2 and 18 years old, who suffered a head trauma.

The retrospective study was conducted by analyzing the medical documentation from Child Surgical Emergency Room in Gornoslaskie Centrum Zdrowia Dziecka. Data was obtained for years 2015 and 2016. The study group included 519 patients. Chosen patients were between the age 2 and 18 at the time of admission. Patients were admitted after head trauma and referred to a head CT scan.

According to guidelines of (PTChD) Polish Society of Child Surgeons patients were divided into group of low, medium and high risk. In addition we selected a group that according to American Academy of Pediatrics was recommended a head CT scan.

Head CT scans in patients form group with low risk are usually performed without justification. There is low possibility of abnormal intracranial findings in patients with mediumrisk.

**Keywords: children, head trauma, CT scan**

## **Does studying medicine hurt? The influence of medical studies over condition of venous circulation among students of Silesian Medical University.**

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Chronic venous insufficiency (CVI) is the most common health issue among patients with diseases of venous system and is occurrence of stasis signs as a result of reflux and/or lower limbs veins structure/blockage. This illness concerns patients in different age range, as well as it does not omit a very young people.

In this research an attempt was made to determine a frequency of CVI's occurrence in Silesian Medical University students population and influence of traceable risk factors in chronic venous insufficiency progress.

The research has been carried out with paper surveys specially created for it , which were given out personally to 1st year students in Katowice and 6th in Zabrze. The survey included closed yes/no questions (31 in total) and contained CIVIQ questionnaire, VCSS scale and questions about risk factors and predispositions to CVI.

205 questionnaires, where 124 were gained from women and 81 from men, have been the subject to analysis. Following medicor results were noted for VCSS: 1st year - 1,2 points and 6th - 2,7 points. Score in CIVIQ scale, which relates to CVIs patients life quality, amounted properly 28 and 32 by significant differences between particular persons.

On the basis of above facts and other answers analysis, following conclusion has been drawn: there is possible positive correlation between both age and risk factor, which are strictly related to the studies type, and occurrence and progress of CVI in population of questioned students. Further correlations are in the course.

**Keywords: CVI, medical, studies, risk, factors**

## The risk factors of children's cholelithiasis.

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The frequency of cholelithiasis is bigger among adults than children. Due to various sources it's about 0.13 - 1.9% at children. Last medical news indicate increasing trend of cholelithiasis among children.

The aim of our study was to analyse children's cholelithiasis risk factors, such as: age, medical factors (diseases, pharmacy) and environmental factor.

Patients who had been qualified to cholecystectomy between 2012 – 2017 (50 patients). They have been divided into two groups due to their age. First group was consisted of patients up to 12 years old and the second one - patients over 12 years old. Risk factors analysis has been based on disease history fulfilled with phone-anquette. We have been estimating such factors like: blood group, prenatal interview, diet, drugs, genetic and metabolic diseases and pharmacotherapy including contraception.

We have indicated that cholelithiasis more common among II group age. We have proved that it's also more frequent in females rather than male gender. We have also indicated correlation with familial etiology. We have claimed that lifestyle and diet have significant influence on children's cholelithiasis frequency.

Children's cholelithiasis etiology is composed of many factors from which the most important are: gender, family cases and lifestyle.

**Keywords: cholelithiasis, children, risk factors**

## **Hitting the gym vs. hitting the books: study of the incidence of thoracic outlet syndrome in the population of students aged 19-27**

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Thoracic outlet syndrome (TOS) is a broad term that covers disfunctions caused by a compression of neurovascular bundle in the region of the thoracic outlet. Clinical symptoms include: pain or paresthesia of the upper extremity, shoulder and neck; weakness and difficulty to execute precise movements. TOS can be classified as three main types: neurogenic, arterial and venous. There is no specific diagnostic procedure, diagnosis of TOS is based on patient's history, provocative tests and radiological imaging. Practicing sports that build arm or shoulder muscles, as well as poor muscular development and posture, increase the risk of TOS.

To compare the incidence rate of TOS symptoms in two groups of students - the one who train pectoral girdle muscles (attend the gym) and the other who do not perform such exercises.

The study group of 100 patients — Medical University of Silesia students aged 19–27, consisted of two subgroups - 50 students who attend the gym and 50 who are less physically active. Subjects underwent examination including anamnesis and a series of provocative tests (Adson's, Wright's, elevated arm stress and supraclavicular pressure tests).

In the so far analysed group of 25 students (14 women, 11 men) results of at least one provocative test were positive in 10 cases (40%). This subgroup was compared with the "gym students" (results are under development).

Despite the lack of clinical symptoms of TOS some of the subjects had positive results of the TOS provocative tests. The presence of positive tests suggests that maintaining good body posture should be important for both studied subgroups.

**Keywords: Thoracic outlet syndrome; TOS; provocative tests; gym; body posture**

## **Pediatric Trauma Score (PTS) scale as a predictor of injury severity in polytraumatized pediatric patients**

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Polytrauma is a medical term describing the condition of a person who has been subjected to multiple traumatic injuries that affect at least two organs or systems and need specialist care. They are the result of a high-energy trauma which results in a life-threatening condition. Polytrauma is the third cause of death among the population worldwide and first in patients at the age between 1 and 14.

The study aims to evaluate the prognostic value of PTS in polytraumatized pediatric patients.

Clinical data of 54 polytrauma patients (age 10,14+ / -5,65) were retrospectively analysed. Patients were evaluated according to PTS scale where criteria assess airway patency, state of consciousness, systolic blood pressure, wounds and bone fractures presence. Information about ICU and general hospitalization time, mechanical ventilation time and pressor amines usage time was collected. The collected data were statistically analysed.

In the analysed group, scores ranged from -4 to 5 points. Every one of the 54 patients needed treatment in the Intensive Care Unit. Mortality rate in the whole group was 20% and in patients with a score below 0- 42%. The research demonstrated a statistically substantial correlation between PTS number and mortality ( $p=0,002$ ), ICU hospitalization time ( $p=0,000$ ), mechanical ventilation time ( $p=0,000$ ) and pressor amines usage ( $p=0,018$ ).

PTS allows a quick assessment of the patients' condition after trauma and has a statistically proven prognostic value in predicting polytrauma patients' condition. It simplifies the selection of patients and qualification for treatment at the Trauma Center.

**Keywords: politrauma, pediatric injury scale**

## Evaluation of ankle's joint range of motion in patient with venous leg ulcers

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Leg ulcers are the most severe complication of venous insufficiency. The reason behind formations of ulcers in venous insufficiency are venous stasis, venous hypertension, inflammatory reaction and damage of microcirculation. There are reports stating, that in patients with limited ankle's joint range of motion due to disease progression, efficiency of muscle pump action is significantly lower and because of that prognosis of ulcerations treatment is worse.

Purpose of this study is to perform measurements of ankle's joint range of motion in patients with venous leg ulcers and in healthy persons and comparison of range of motion between these two groups.

Measurement of ankle's joint range of motion was made in group that consisted of 50 healthy persons and in group of patients with leg ulcers. Goniometer was used to measure range of motion using uniform method of measurement.

In healthy patients group the result of measurement of maximum range of motion was 74,38 average for left ankle joint and 73,86 average for right ankle joint. In group of patients with venous leg ulcers, statistically significant restriction of ankle's joint range of motion was noted – amongst significant factors affecting reduction of ankle's joint range of motion among others, prolonged duration of ulcers near the area of ankle joint, localisation of ulcers near malleolus or near 1/3 of lower shin, were identified.

Based on results we can conclude that development of venous insufficiency and creation of leg ulcers may be associated with restriction of ankle's joint range of motion, which potentially can result in calf's muscle pump decrease of efficiency.

**Keywords: venous insufficiency, venous leg ulcers, range of motion, ankle joint, muscle pump**

## Usefulness of ER ultrasonography in diagnosis of acute appendicitis

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Ultrasonography is nowadays one of the most common imaging during diagnosis the patient directed to emergency surgery. In case of acute appendicitis, USG can confirm the diagnosis, or exclude it by finding other organ pathology.

The aim of this retrospective study was to demonstrate the usefulness of the USG as a recommended imaging modality to confirm pathological appendix visualization in comparison to clinical patient's examination, pre-operative serum C-reactive protein level and post-operative histopathology of appendix.

104 patients admitted for suspect acute appendicitis and operated on ER in Department of Endocrine, General and Vascular Surgery in Kopernik Hospital in Łódź, between January 2016 and January 2017, were included. All patients with periappendiceal abscess or cured conservatively were excluded. The patients were divided in two groups: I – with described appendix pathology and pre-operative clinical state described at least 5 points in Alvarado score; II – without described pathological USG signs and pre-operative clinical state described at least 5 points in Alvarado score. They were compared between, according to: sex, age, CRP level, appendix pathology and Alvarado score. Collected data were statistically analysed and compared with enabled publications from last 2 years (2016-2017).

The 1st group of 57 patients indicated statistically significance (p

**Keywords: acute appendicitis, ultrasonography, Alvarado score, CRP**



## **Diagnosis and treatment of patients with symptoms of bleeding in the upper gastrointestinal tract.**

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Upper gastrointestinal (upper GI) bleeding constitutes a significant proportion of medical interventions urgently. The aim of the study was to evaluate factors predisposing causes of bleeding, treatment and prognosis in patients with symptoms of upper GI bleeding.

The analysis was made on the basis of the information contained in the stories disease patients hospitalized in the Clinical Department of General Surgery, Bariatric and Emergency Medicine in Zabrze in 2016.

In a group there were 57 patients (40 men and 17 women) aged 33 to 95 years (average age 65 years).

The most common symptoms include: black vomiting- 62% of patients, tarry stools- 58% of patients, bloody vomiting- 38% of patients. The most common cause of upper GI bleeding were gastritis and stomach ulcers- 33% of patients. The most common predisposing factors for bleeding were abusing alcohol- 28% of patients and taking NSAIDs- 26% of patients. Most of the patients were treated conservatively. Only 2 (3.5%) patients were operated. In the group of patients with the most common cause of death was bleeding from esophageal varices- 3 (5.3%) patients.

Diseases that cause the symptoms of upper GI bleeding occur more frequently in men. 2. Common causes of upper gastrointestinal bleeding are alcohol abuse and Nonsteroidal anti-inflammatory drugs. 3. Mortality of upper gastrointestinal bleeding occurs mostly due to the rupture of esophageal varices. 4. The proportion of patients requiring surgical treatment is small. strakt

**Keywords: bleeding, esophageal vaices**

## **Patients with lower limb amputations – evaluation of postoperative care and rehabilitation.**

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Critical limb ischemia is a state demanding vascular intervention. The first way of treatment is hospitalisation followed, if possible, by vascular reconstruction. When this solution doesn't improve patient's condition and ischemia raises amputation is necessary. It's restrictive measure that disables the patient until the end of life. There are many methods facilitating patient's daily functioning, which are popularized in western countries but still not enough implemented in Poland.

The exposure of the issue of leg amputation in patients with critical lower limb ischemia and indication causes of life's comfort decrease. Focus was put on prosthesis usage and rehabilitation.

The thesis was based on analysis of medical records in patients with femoral or crural amputation on vascular surgery ward in GCM hospital in Katowice-Ochojec between 2013 and February 2017.

Data showed performing lower limb amputation in 70 patients amongst which 16% sought application for prosthesis or were already using prosthesis on admission and 13% sought application for systemic rehabilitation. 1 patient underwent reamputation.

Prosthesis usage and rehabilitation is on low level. It involves worsening patient's life conditions and efficiency. It's necessary for public health care to focus efforts not only on easy access to particular procedure but also improving life conditions after one.

**Keywords: ischemia, leg amputation, lower limb,**

## **The assessment of the influence of elastic and nonelastic compression method on the function of calf muscle pump.**

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Compression therapy is a recommended treatment of venous conditions and crural ulcer treatment and prophylaxis. It prevents the collecting of blood in the vein system, improving also the venous outflow from deep and superficial vein system. Moreover, it improves the calf muscle pump efficacy, lowers venous blood pressure and counters harmful changes in microcirculation. The primary prevention and therapy involve elastic and nonelastic compression in combination with mobilisation of the patient.

Methods and materials: short-stretch bandage, first class compression stocking and second class compression stocking, Kikuhime pressure sensor Measuring pressure with Kikuhime pressure sensor under the applied compression

The aim of this research was to assess short-stretch bandage, first class compression stocking and second class compression stocking in terms of the pressure applied. The exercises performed (stork walk and toe raises) aimed at activating calf muscle pump. Kikuhime pressure sensor was used to measure the created pressure under the applied compression.

The highest pressure values were obtained in supine position using short-stretch bandage. Also, while using this method the most substantial reduction in the pressure was obtained when mobilising the patient or performing the exercises. Elastic compression method resulted in lower initial pressure value and lower pressure reduction.

The most optimal compression method, in the case of efficient calf muscle pump, is the usage of non-elastic compression. When recommending exercises one should consider the type of compression method used.

**Keywords: elastic and non-elastic compression therapy, calf muscle pump, patient mobilisation**

**Assessment of the smoking on the brachial artery flow-mediated dilatation.**

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Dysfunction of vascular endothelium verified by FMD test (flow-mediated dilatation) is a predictor of cardiovascular disease. Smoking is a significant risk factor of cardiovascular disease that impair endothelial function.

The aim of this study was to compare vascular endothelial function in groups of smoking and non-smoking people and examine if smoking of cigarette directly before test modifies result of FMD among non-smokers.

In the study vascular endothelial reactivity was assessed in a group of 10 smokers and control group of 15 non-smokers, comparable in terms of age and without coexisting risk factors of cardiovascular diseases. All patients underwent FMD - after temporary suprasystolic occlusion of the upper arm, vasodilatation of brachial artery was measured by ultrasonography. Collected data were statistically analyzed by using of Statistica software.

In the control group of non-smokers the dilatation of the brachial artery after occlusion was observed in the FMD test. However, the smokers group was observed to have the reduced value of the test compared to the values obtained in the non-smokers group, but without affecting the results after direct smoking.

Endothelial function is impaired among smokers and direct smoking of cigarette before test does not significantly alter the FMD value in this group.

**Keywords: endothelial function, smoking, dilatation**

## **The evaluation of incidence of smoking among patients who were qualified for vascular procedures.**

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Smoking is one of the main risk factors of developing atherosclerosis which in most cases is the cause of vascular diseases such as leg ischemia, narrowing of carotid arteries or aortic aneurysms. Giving up smoking is basic non-pharmacological treatment and underlies the secondary prevention of these diseases.

The point of the research is the evaluation of incidence of smoking among patients who were qualified for vascular procedures.

The material applied in this research was a dedicated and anonymous questionnaire. There were 58 patients hospitalized in the Vascular Surgery Department of GCM in Ochojec whose answers were taken account of. All the tested patients were aged 54 to 82. The following were evaluated: fact of active smoking, previous attempts to give up smoking, knowledge of harmfulness of smoking, motivation to give up smoking.

The medium time of smoking before hospitalization was 39 years. Among the hospitalized patients 21% remained smokers, out of which 75% had previously gone through vascular procedures. Previous attempts to give up smoking were declared by 55%. 97% of patients had acknowledged smoking as a risk factor of vascular diseases.

In spite of acknowledgement of threat to health, still big percentage of patients undergoing vascular procedures, remained active smokers. This justifies educational action among these patients also before the hospitalization.

**Keywords: smoking, vascular diseases, secondary prevention**

## **Assessment of medical students awareness in the field of epidemiology, prevention and treatment of venous tromboembolism**

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Venous tromboembolism (VTE) is one of the most common causes of death associated with cardiovascular diseases. In Poland it is affecting about 1000-2000 / 100 thousand people per year. Venous tromboembolism manifests itself as a deep vein thrombosis (DVT) and/or pulmonary embolism(PE). Despite the relatively high incidence rate of this disease, access to information about its risk factors as well as effective prevention is limited.

The aim of the study was to asses the knowledge of medical students (from III to VI year) of Medical University of Silesia in Katowice in the field of venous tromboembolism.

A questionnaire was performed on a group of 50 medical students. 77% of interviewees were women and 23% were men. Participants of the study based their answers on the knowledge acquired at the university.

Proper definition of the venous tromboembolism was correctly pointed out by 30% interviewees . 50% had given the right mortality rate of venous tromboembolism. Only 8% had knowledge about the age in which VTE is the most common. 80% of students were not be able to diagnose VTE. 13% was familiar with the prophylaxis of VTE. Furthermore, 75% state that lecturers at the medical university pay insufficient attention to VTE or they do not mention it at all.

Survey results show not only low level of knowledge but also low level of awareness related to VTE in the population of students of Medical University of Silesia. On account of relevant clinical and epidemiological meaning of the problem, above-mentioned information should be taken into consideration during formulation of modifications of medical school curriculum.

**Keywords: venous tromboembolism, awareness**

## **Varicocele in adolescents – analysis of laparoscopic surgery efficiency.**

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Varicocele in adult population of patients pass for cause of infertility. We observe an increased rate of pampiniform venous plexus ectasia in adolescents.

The purpose of study was comparative analysis of effectiveness of laparoscopic treatment.

In years 2011-2016 in Department of Paediatric Surgery, Medical University of Silesia were operated 169 boys because of III level of varicocele. Operation was carrying with cuts - coagulant instruments (27,2%), polymer clips (24,3%), suspenders (44,4%) and hybrid methods (4%). Complete informations from follow up was obtained in 42 % adolescents from studied group.

Collected data were subjected to statistical analysis. Diameter of extended vessels in all study populations amount to 0,32 cm, average age – 16,5 years, average time of operation generally was 44 minutes. Specialist performed 52.4% of procedures, resident 47.6%. Procedure time independent of the method performed by the specialist and the resident was statistically different

**Keywords: varicocele, adolescents, laparoscopic surgery.**

## **Prognostic value of BIG score in pediatric trauma patients in Department of Surgery and Urology of John Paul II Upper Silesian Child Health Centre**

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Trauma is a serious problem and the common cause of disability or death. The BIG score is a simple method to assess the degree of severity of injury, prognosis, and the predicted risk of death in polytraumatic pediatric patients. The base excess (BE), the international normalized ratio (INR) and the Glasgow Coma Scale (GCS) are required to use the BIG score.

The aim of the study is to analyze the data of traumatic patients hospitalized in the Department of Pediatric Surgery GCZD and to assess the correlation between the BIG score and hospitalization duration.

Documentation of patients, BE, INR, GCS, BIG score, hospitalization time, patient age, and other factors were analyzed. Results were statistically analyzed using Statistica software.

Our study shown no association with BIG score and general hospitalization time. However, we have demonstrated statistically significant correlation between the Base Excess and general hospitalization time.

In our opinion, the BIG score is not a useful tool for predicting the general hospitalization time on the pediatric surgery ward. Although the statistically proven prognostic value of Base Excess in predicting polytrauma patients' condition seems to be worth further studies.

**Keywords: BIG score, polytrauma, pediatric surgery**



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## **SESSION OF OTHER SURGICAL SPECIALITES**

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## **Evaluation of treatment outcomes and analysis of prognostic factors in patients with pleural abscess.**

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Pleural abscess is one of the most difficult surgical challenges, because treatment involves long hospitalization and frequent complications. In addition, the golden standard for treating a pleural abscess is still not established.

The aim of the study is to evaluate the influence of selected prognostic factors on the outcome of treatment and to compare the effectiveness of the main treatments.

A retrospective analysis of the medical records of 431 patients hospitalized at the Thoracic Surgery Clinic and Department in Zabrze due to pleural abscess in the years 2012-2016. The study included information such as sex, age, location of the abscess, current and clinical treatment, discharge status and morphological parameters.

Patients clinical profile : 356 male (82.6%). The average age was 54 years. The most common cause of the abscess was lung infection (42.2%) and postoperative complication (16.4%). Pleural abscess was located on the right side in 57.8% of cases. The most commonly used methods of surgical treatment were: drainage (88.6%) and videotreatoscopy (44.5%). The average hospitalization time was 16 days. During treatment, leukocyte level decrease on average of  $4.43 \cdot 10^3 / \mu\text{L}$

The treatment of pleural abscess requires an individual approach that takes into account the patient's general condition, co-morbidities and treatment used. It is important to use the treatment as quickly as possible.

**Keywords: pleural abscess, treatment, analysis**

## **The analysis of factors affecting on a bladder cancer recurrence in case of patients treated by BCG therapy on account of bladder cancer.**

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It is well known that BCG therapy is an effective method of the treatment in prevention of bladder cancer recurrence. Histopathological and morphological factors have influence on effectiveness of therapy.

The aim of this research was analysis of factors influence on bladder cancer recurrence in case of patients who have bladder cancer and they are treated by BCG immunotherapy.

The research is based on a group of 110 patients diagnosed with bladder cancer. The study uses data obtained from the medical records of patients treated for bladder cancer in the Department of Urology of the Samodzielny Publiczny Szpital Kliniczny No. 1 in Zabrze and then subjected to treatment in the form of complementary intravesical BCG immunotherapy in the Department of Urology during years 2008-2015.

The factors that were statistically significant: recurrence - in case of primary tumor recurrence occurred in 11.94%, in the case of recurrent tumor recurrence occurred in 46.51% (p<0.05, 40,74% (p=0,042).

The study found that gender the higher probability of recurrence occurs in patients with tumor with grade T1, tumors with a diameter bigger than 3 cm and recurrent tumors.

**Keywords: Bladder, bladder cancer, BCG therapy, recurrence**

## **Evaluation of treatment outcomes and satisfaction with sexual life of patients after the implantation of three-piece inflatable penile prosthesis.**

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Erectile dysfunction (ED) are one of the most common sexual dysfunction in men. The problem affects about 50% of men age 40-70 years. Algorithm of treatment includes oral preparations, injections to the corpora cavernosa and surgical treatment including the implantation of three-piece inflatable penile prosthesis.

Analysis of the results of surgical treatment of patients with ED in the material of Clinic of Urology in Zabrze

Assessment of the results of the operation of 16 patients, using the three-piece inflatable penile prosthesis between 2013-2017. All patients were on rigorous postoperative control. Satisfaction rating was based on the IIEF-5 classification (International Index of Erectile Function) in men and the classification of Female Sexual Function Index (FSFI) in women.

Intraoperative in one patient we experiences the cross-over phenomenon. One patient had displacement of the balloon in the first hours after operation. Among the early complications one patient with diabetes reported impaired healing of the wound. There were no distant complications. On the basis of the IIEF-5 and FSFI classification, satisfaction with sex life was 100% among the operated men, and 85% among their partners. One patient reported that he feels discomfort due to the shortening of the penis of about 1.5 cm. One Partner of the patient has noted aversion to sexual relations

Three piece penile implants are a highly effective treatment option for erectile dysfunction. Complications occurs in a small percentage of patients.

**Keywords: Penile Prosthesis, Erectile dysfunction, Satisfaction**

## **Neutrophil to lymphocyte ratio (NLR) predict differentiation muscle invasive bladder cancer (MIBC) and non muscle invasive bladder cancer (NMIBC).**

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The paper presents the clinical picture, medical indications and both immediate early and late complications resulting from surgical treatment for clinical diagnosis of cervical cysts of the neck in Department of Surgery of Congenital Malformations of Children and Traumatology. Between 2013 and 2016, 19 patients with clinical diagnosis of cysts were diagnosed and operated. 68% of them were girls and 32% were boys. 37% of patients were diagnosed with a thyroglossal cyst, whereas in 63% of cases a second pharyngeal arch branchial cleft cyst was recognized. 57% had inflammation and in 31% of cases discharge was present. In 32% of children the changes have been observed since birth while in 42% they emerged in a sudden way. Time between the observation of lesion and appointment with a doctor ranged between one day and two years. Of the lateral pathologies, 50% have manifested only in the form of fistulas and 25% were bilateral. Right-sided changes were most common, accounting for 58%. In 3 patients a cyst and an accompanying fistula were observed next to each other concomitantly on the same side. Two middle cysts were accompanied by fistulas. All patients were operated. There were two age peaks that fall on the 2nd and 14th year of age. The oldest patient was 14 years old. In 3 children, complications were observed in the course of healing of postoperative wound. No recurrence has been observed.

**Keywords: lateral cysts of the neck, lateral fistulae of the neck, median cysts of the neck**

## Cysts and fistulas of the neck in children

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The paper presents the clinical picture, medical indications and both immediate early and late complications resulting from surgical treatment for clinical diagnosis of cervical cysts of the neck in Department of Surgery of Congenital Malformations of Children and Traumatology. Between 2013 and 2016, 19 patients with clinical diagnosis of cysts were diagnosed and operated. 68% of them were girls and 32% were boys. 37% of patients were diagnosed with a thyroglossal cyst, whereas in 63% of cases a second pharyngeal arch branchial cleft cyst was recognized. 57% had inflammation and in 31% of cases discharge was present. In 32% of children the changes have been observed since birth while in 42% they emerged in a sudden way. Time between the observation of lesion and appointment with a doctor ranged between one day and two years. Of the lateral pathologies, 50% have manifested only in the form of fistulas and 25% were bilateral. Right-sided changes were most common, accounting for 58%. In 3 patients a cyst and an accompanying fistula were observed next to each other concomitantly on the same side. Two middle cysts were accompanied by fistulas. All patients were operated. There were two age peaks that fall on the 2nd and 14th year of age. The oldest patient was 14 years old. In 3 children, complications were observed in the course of healing of postoperative wound. No recurrence has been observed.

**Keywords: lateral cysts of the neck, lateral fistulae of the neck, median cysts of the neck**

## Is stereo vision possible in horizontal strabismus?

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Stereo vision is the ability to derive information about how far away objects are, based solely on the relative positions of the object in the two eyes formed in slightly different points of the retinas. It depends on both sensory and motor abilities connected with cortical mechanisms for sensory fusion. The condition for the occurrence of binocular vision is normal retinal correspondence resulting from a parallel set eyes - orthophory. Lack of orthoposition is an obstacle to the development of binocular vision.

Range of relationship between horizontal deviation and stereoscopic vision.

In this study 50 patients (32 women and 18 men) were examined, aged 18-35 years, mean 25. The patients with refraction errors (28) were examined in their own correction. Patients with high refractive errors and without stereoscopic vision were excluded. Randot's Test was used to assess the level of stereopsy. Prism glass was used to change the fixation point from orthoposition causing convergent and divergent strabismus until the original stereoscopic vision level has been lost. T – student Test was used for statistical calculations.

Stereo vision was preserved in convergence on average to 14.29 prism diopters, with a divergence of 9.02 prism diopters. There was a statistically significant difference between stereoscopic vision ability in convergence and divergence ( $p=0,047$ )

Stereoscopic vision is only possible with a slight deviation from orthoposition. Both divergence and convergence affect binocular vision, but divergence has bigger meaning than convergence in stereo vision.

**Keywords: stereoscopic vision, Randot test, convergence, divergence**



## **Analysis of ocular injuries in pediatric patients admitted to Ophthalmology Ward of Gibinski's Hospital in Katowice in years 2011-2015**

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Ocular injury is one of the most common cause of children's admission to hospital. The frequency of admissions mirrors the importance of the problem. The consequence of injury could be permanent, partly or entirely, vision loss. It results in difficulties in harmonic development of child and lowering the quality of its further life.

The data were collected on the base on books of admissions and medical histories of patients treated in above-mentioned ward from May 2011 to February 2015. We were analysed the age of children, the type of injury, time from injury to admission, treatment, diagnostic methods, acuity of vision in the day of admission and discharge, and also how long they stayed there.

We analysed 370 children. The average age of child was 5,8 years. The character of injuries was diversified, from most common - dressing the wound of conjunctiva and cornea arose from foreign body to complicated cases which were result of shot of firecrackers, chemical burns, being bitten by the dog or the injury of orbit caused by direct hit into the face. Serious injuries were complicated e.g. by retina detachment or haemorrhage to vitreous humour.

Ocular injuries constitute the crucial ophthalmologic and pediatric problem. Essential for effective treatment is quick refferal in doubtful cases to specialistic pediatric hospital and immediate reaction of parents. Significant predictional factor is the time from the injury to admission to the hospital. Proper medical care is base for decreament of the number of serious complications like vision dysfunction and their results which can have immense impact on functioning in future life.

**Keywords: ocular injury, child optthalmology**

**Diagnosics and surgical treatment of mediastinal tumors in Thoracic Surgery Department, Department of Thoracic Surgery, Medical University of Silesia from 2012 to 2016**

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Mediastinal tumors are diversified neoplasms which may be stemmed from all the tissues of mediastinum. Due to asymptomatic growth, mediastinal masses are most frequently unveiled accidentally in X-ray scans. Therefore neither primary nor secondary prevention methods, i.e. forestalling the development of tumors or screening tests, were established.

Analysis and interpretation of diagnostic methods and treatment of mediastinal tumors of patients hospitalized in Thoracic Surgery Department in Zabrze from 2012-2016.

Retrospective analysis of medical documentation of patients hospitalized in Thoracic Surgery Department in Zabrze from 2012-2016. The subjects of the run-down were diagnostic procedures, surgical treatments, the length of the hospitalization, the histological identification and clinical diagnosis, concomitant diseases and the frequency of post-operative complications.

Between 2012 to 2016 in Thoracic Surgery Department in Zabrze, 303 people (150 women and 150 men) were admitted to the hospital due to mediastinal tumor. The average age of all subject was  $55,1 \pm 16,3$  years. The principal diagnosis for 89% patients pertain to neoplasm in which one in every six being malignant. 16% of patients were also suffering from myasthenia gravis. The average length of the hospitalization was  $5 \pm 3,3$  days. The perioperative mortality didn't exceed 1%.

Mediastinal tumors occur with similar incidence rate among both genders. The majority of lesions are malignant tumors. Surgical procedures remain the first-line of both diagnostic and treatment methods of mediastinal tumors.

**Keywords: thoracic surgery, mediastinum, tumor, myasthenia gravis**

## **Benign tumors of visual organ in children and adolescents – analysis of clinical data**

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Eyelid, conjunctival and orbital tumors are the most common neoplasm in daily ophthalmology practice. General data on the relative frequency of the various tumor subtypes not only depends on geographic location and genetic background of the population but also on its socioeconomical status and access to medical care.

Retrospective analysis of benign visual organ tumors in children and adolescents.

674 cases were analyzed, 385 girls and 289 boys who underwent surgical removal of nodular lesions at UCK im. prof. K. Gibińskiego Medical University of Silesia in Katowice from January 2011 to September 2015. The study group consisted of patients aged 6 months to 18 years. The average age was  $7.94 \pm 5.38$  SD.

Benign tumors were removed mostly from 2-4 year old children. The eyelid tumors were the most frequent localization (520 eyes; 66,67%) and less frequent - conjunctiva (160 eyes; 20,51%). Histopathology results showed that on eyelids most common lesion was chalazion (362 eyes; 69,62%) and epidermal cyst (36 eyes; 6,92%). In contrast, 50% of the conjunctival lesions were nevi pigmentosi. The most common lesions of the orbit were epidermal and dermoid cyst (28 eyes; 71,8%). The peak of nevi pigmentosi occurrence was 11-13 years old. Dermoid cyst was diagnosed mainly in annual and biennial children.

There is a wide spectrum of benign tumors in the visual organ in the developmental age. The histopathological profile of the tumors correlates with the age and localization.

**Keywords: benign tumors, eyelid, orbit, conjunctival nevus, dermoid cyst**

## **Prevalence of myopia, hyperopia and astigmatism among children and adolescents - analysis of clinical data**

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Refractive errors are defined as conditions in which the optical system of non-accommodating eye fails to bring parallel rays of light to focus on the retina. Visual impairment due to refractive errors is one of the most common problems in children and one of the leading causes of treatable blindness.

Assessment of myopia, hyperopia and astigmatism among children and adolescents.

The study involved 674 patients (385 girls and 289 boys) undergoing surgery of removing benign tumors of the eye in UCK in Katowice, from 2011 to 2015. The average age was  $7,94 \pm 5,38$  SD. The spheric equivalent equal to or worse than  $-1.0D$  at least in one eye was classified as myopia and hyperopia was defined as an SE of  $+1.5D$  and worse. Astigmatism was defined as a cylinder error equal to or worse than  $-0.75D$ . Anisometropia was defined as an interocular difference of  $1.00 D$  or more.

132 patients (19,58%) had hyperopia and 98 (14,54%) were diagnosed with myopia. A positive correlation was described between the prevalence of myopia and age, as well as a negative correlation between prevalence of hyperopia and age. Myopia occurs more frequently in girls and children living in cities. Hyperopia occurs more frequently in boys. Astigmatism was observed among 225 children (33,38%) and astigmatism with-a-rule predominated. 70 children (10,39%) had anisometropia.

The prevalence of myopia and astigmatism among Polish children is high and seems to be increasing. Early detection of refractive errors in pediatric populations is particularly important because of its potential influence on correct visual development.

**Keywords: myopia, hyperopia, astigmatism**

## **Intracranial complications of sinusitis and otitis**

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Acute otitis and sinusitis are common diseases in children. Initial symptoms of developing complications are usually non specific and masked by the antibiotic treatment. Prompt and accurate diagnosis allows the implementation of correct treatment. Due to the necessity of interdisciplinary management of the disease it is strongly recommended to treat patients in the centers where ENT, intensive care unit, neurosurgery and neurology are available.

Analysis of the types of intracranial complications, establishing etiology, analysis of clinical symptoms and results of treatment.

A retrospective study was conducted on the basis of medical records of children. The study included age, gender, source of infection, type of complications, radiological images, results of culture swabs, types of surgery, drug therapy, length of in patient stay and neurological condition post treatment. There was 44 children enrolled : 24 with complications of otitis and 20 with complications of sinusitis. The collected data was statistically analyzed.

The main symptoms of intracranial complications are fever and headache. The most common complications in the case of sinusitis were subdural and epidural empyema, and meningitis. In patients with otitis, the most common complications were cerebral venous sinus thrombosis and meningitis. There was one death and three cases required neurosurgical intervention.

Knowledge of clinical symptoms and the appropriate use of ancillary tests allows prompt and correct diagnosis. Surgical treatment combined with medical therapy increases probability of the complete resolution without permanent neurological deficits

**Keywords: acute otitis and sinusitis, intracranial complications**

## **Assessment of nutritional status of patients with cancer of the digestive system before laparotomy. The location of the tumor and the levels of malnutrition.**

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Malnutrition is a phenomenon inherent in the digestive tract cancer, and occurs in a significant number of patients at the time of admission to hospital.

Assessment of nutritional status of patients with cancer of the digestive system before laparotomy. The early identification of patients with malnutrition.

Our material is based on data of questionnaires assessing nutritional status (NRS 2002, SGA, MNA) and data from documentation of hospitalized patients in surgical oncology clinic in Nicolaus Copernicus University. The survey was carried out in patients qualified for laparotomy for cancer.

The study group consists of 86 patients qualified for laparotomy for cancer. The greatest number of patients - 60% of patients with colorectal cancer, 24% are patients with stomach cancer, the remaining patients had an established diagnosis of cancer: esophagus, pancreas, liver, gallbladder. After analyzing the data from the survey NRS 50% of patients received  $\geq 3$  points. Analyzing the scale of SGA, wasting was detected in 1% of patients - from stomach cancer, malnutrition were detected in 7% - mainly patients with cancer of the esophagus, rectum and stomach. The high risk of malnutrition - 33%, especially patients with cancer of the liver, pancreatic cancer localized in the colon. The data from scale MNA showed malnutrition in 6%.

The analyzed material confirmed that malnutrition is often found in patients with gastrointestinal tumors before treatment. It should be very carefully assessed the nutritional intervention, which has an impact on the improvement of cancer treatment - surgery and systemic.

**Keywords: malnutrition, cancer**

## **Persuit of the perfect penis: preputial reconstruction versus circumcision in hypospadias repair**

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Hypospadias is a common anomaly of the male genitalia. In principle, the prepuce can be reconstructed during hypospadias repair, but the procedure has not gained wide acceptance and preputial reconstruction (PR) is surrounded by several controversies.

The aim of the work was to compare urethral and skin complications between consecutive patients undergoing distal hypospadias repair with prepucioplasty versus circumcision.

Case-cohort study comparing urethroplasty and skin complications between consecutive patients undergoing distal hypospadias repair with prepucioplasty versus circumcision. Of 90 hypospadias repairs 75 occurred with prepucioplasty cases and 15 with circumcision. Both urethroplasty and skin complications occurred in 27 (30%) patients [fistulas, glans dehiscences, meatal stenosis, deformation of foreskin].

PR can be important for patients requiring hypospadias repair and their parents. It can be performed in almost all patients with distal hypospadias. PR does not seem to increase urethroplasty complications. The reconstructed prepuce could be easily retractile at the end of surgery.

Prepucioplasty does not significantly increase urethroplasty or skin complications after distal hypospadias repair. PR can be offered to the vast majority of distal hypospadias patients, although some modification of the technique for hypospadias repair can be required.

**Keywords: hypospadias, preputioplasty, circumcision**

INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF INTERNAL MEDICINE**



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## **Ghrelin polymorphism rs 26802 in overweight and obese patients**

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Obesity is a common disease of affluence which negatively influences patient's quality of life and survival. Both environmental and genetic factors contribute to development of obesity. Ghrelin is one of gastrointestinal hormones involved in metabolic and energy homeostasis. Taking part in hunger/satiety and energy balance regulation it is suspected to be an important component of pathophysiological pathway leading to overweight and obesity.

Assessment of any relationship between rs26802 ghrelin gene polymorphism and the prevalence of overweight or obesity.

The study involved 483 consecutive patients who attended the primary healthcare clinic in Southern Poland (212 females and 271 males in average age 52,4 +/- 16,6 years). The anthropometric measurements and venous blood sample were collected for all study participants. Study group were divided by BMI into 3 subgroups: normal weight, overweight and obese. The genotyping of ghrelin polymorphism was conducted with fluorescent-labeled probes using the TaqMan Pre-designed SNP Genotyping Assay. The statistical analysis was performed using Exel 2016 and Statistica 12.

No significant differences in genotype distribution of rs26802 were observed in subgroups with different BMI (control group, overweight and obese). The analysis of blood glucose and lipoprotein levels as well as insulin resistance indicators (HOMA-IR, QUICKY) did not reveal any differences between patients with TT, GT or GG genotypes.

No significant associations between ghrelin polymorphism rs26802 and overweight or obesity were established.

**Keywords: obesity, grelin, polymorphism**

## **The outcome of the management of subclinical hyperthyroidism: The use of radioiodine therapy**

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Subclinical hyperthyroidism is a state of increased thyroid function with few or no clinical definitive signs or symptoms of hyperthyroidism, characterised by a decrease of serum thyrotropin concentration below 0,1 mU, when serum levels of total and free thyroxin and triiodothyronin concentration are within reference ranges.

To evaluate the short-term (5 years) effect of radioiodine therapy (RAIT) on the achievement of euthyroidism and prevention evolvement to overt hyperthyroidism.

We treated 120 patients, aged 28–65 years; 44 patients with multinodular goitre (MNG), and 76 patients with autonomous nodule (ATN). Malignant changes were excluded in all nodules by fine needle aspiration biopsy. All the patients had serum TSH levels  $<0.1$  mU/l and effective T-half was more than 3 days at the time of treatment. The activity dose ranged between 200 and 600 MBq. The absorbed dose (Gy) for MNG ranged between 150 and 260, and for ATN: 200–300. Follow up control was done every 6 weeks in the first year, then every 6 months.

After 1 year 98% of patients with ATN and 89% of patients with MNG achieved euthyroidism. 2% of patient with ATN and 8% of patient with MNG developed hypothyroidism. 3% of the patients had persistent hyperthyroidism and received second dose of radioiodine therapy. After 3 years of RAIT 4% of patients with ATN and 10% of patient with MNG developed hypothyroidism. After 5 years of RAIT 4% of patient with ATN and 12% of patient with MNG develop hypothyroidism.

The achievement of euthyroidism and the remission of the symptoms and signs were due to good diagnosis, accurate measurement of administered activity and effective half-life

**Keywords: subclinical, hyperthyroidism, radioiodine**

## The influence of radioiodine therapy on Serum Oxidant-Antioxidants Status in patients with Graves' disease

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Increased reactive oxygen species (ROS) generation and the consequent oxidative damage are involved in the development of Graves' Disease.

To evaluate the influence of radioiodine therapy on some parameters of oxidant/antioxidant balance in patients with Graves' disease.

We studied 28 patients with Graves' disease, aged 19–48 years. As a control group 11 normal adults were studied. The effective half-life measured by the use of radioiodine uptake (RAIU) after 24 and 48 h was more than 3 days at the time of treatment. Malondialdehyde (MDA) as a marker of oxidative stress, glutathione (GSH) and glutathione peroxidase (GPx) activity as a parameters of antioxidant system, were evaluated in the investigated groups before and 6 months after radioiodine therapy. The serum fT4, fT3, TSH, TSHRab were evaluated before and monthly up to 12 months after RIT. Thyroid ultrasound, and thyroid scan with thyroid RAIU were done before and after 12 months of radioiodine therapy. The activity dose was calculated by Marinelli's formula (280 and 600 MBq). The absorbed dose (120 and 200 Gy). The absorbed dose (120 and 200 Gy).

In patients vs. controls there was an increase in MDA level ( $P < 0.05$ ), with significant decrease in GPx activities ( $P < 0.05$ ) and GSH level. In 20 patients euthyroidism was achieved, 4 patients received L-thyroxin replacement therapy due to hypothyroidism, two patients were in subclinical hyperthyroidism, and hyperthyroidism persist in 2 patients. Reduction in thyroid volume after radioiodine therapy was about 48%.

Our results confirm the imbalance of the antioxidant/oxidant status in patients with Graves' disease and Radioiodine therapy improved these balances in Graves' Disease.

**Keywords:** radioiodine therapy, Graves disease, oxidative

## Evaluation of Fullerton test in patients undergoing pulmonary rehabilitation

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Functional testing is becoming more widely used in everyday medical practice, including pulmonary diseases.

The purpose of the study is to analyze the reliability of Fullerton test in evaluating the effectiveness of pulmonary rehabilitation.

Prospective study enrolled 42 patients in the Department of Lung Diseases and Tuberculosis. The chosen patients underwent a thoracic surgery followed by a two week pulmonary rehabilitation. Fullerton test, 6 min walk test, spirometric examination, Borg scale for perceived dyspnea (MRC questionnaire, Borg) and quality of life questionnaire (SF-36, Sw. Jerzy) were performed on all patients before and after pulmonary rehabilitation. The mean and SD of the obtained results were calculated and the sample effect evaluated by calculating Cohen's  $d$  for each domain of the Fullerton test, and evaluating the calculated differences as having small ( $0 \leq d \leq 0.5$ ), mean ( $0.5 < d < 0.8$ ) and large clinical reference ( $d \geq 0.8$ ). Statistical significance of differences was set at  $p < 0.05$ . The relationship between the Fullerton test results and other clinical trial parameters such as a 6 min walk test, spirometry, dyspnea, and quality of life was also evaluated. The study was approved by the Bioethics Committee. The patients were informed on the purpose of the research and signed the consent form to participate in the study.

All patients undergoing pulmonary rehabilitation completed the rehabilitation program without complications. The mean increment of walking distance in the 6 MW test in the examined group was 51 m, which is clinically significant ( $> 50$  m) and statistically ( $p < 0.05$ ) higher. There were statistically significant differences ( $?, P < 0.05$ ) in the Fullerton test domains before and after respiratory rehabilitation: chair stand, arm curl, chair sit and reach, up and go, back scratch test. The clinical significance of the differences in the Fullerton test evaluated by Cohen's  $d$  was found in the domain: chair stand ( $d = 0.81$ ) and arm curl ( $d = 0.9$ ). These values are higher than those obtained in the 6 MWT test ( $d = 0.75$ ).

The Fullerton test is a simple and accessible tool that can assess the effectiveness of pulmonary rehabilitation in patients after surgery due to lung cancer.

**Keywords: Fullerton test, pulmonary rehabilitation**

## Dependence of electrolyte disturbances on selected laboratory parameters in the elderly

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Preserving proper hydration and serum electrolytes concentration is essential to maintaining proper homeostasis.

Assessment of frequency of electrolyte disturbances and dependence on selected laboratory parameters in the elderly.

Among people hospitalized in 2016 in the Department of Internal Medicine in Bytom, the study covered 1001, including 567 elderly patients (acc. WHO). Patients were evaluated for electrolyte disturbances (concentration of sodium and potassium) (SenE group) also basic clinical parameters were assessed: blood count, serum glucose, serum creatinine and estimated glomerular filtration rate (eGFR) by the MDRD formula. The comparative group was seniors without electrolyte disorders (SennonE). Data were analyzed in the Statistica for Windows 12.5 program.

Among all hospitalized senior patients with electrolyte abnormalities there was 49.02% of them. In this group, in 72,30% of patients sodium disturbances were reported, including 64.39% with hyponatraemia; and in 7.91% hypernatremia. Potassium disorders were reported in 52.16% of them; 17.98% had hypokalaemia and 34.17% hyperkalaemia. Hospitalized seniors with electrolyte disturbances were older than seniors without these disorders ( $p < 0.004$ ). Statistically higher creatinine levels ( $p = 0.0000\dots$ ), lowered eGFR ( $p = 0.0000\dots$ ) and higher glucose ( $p < 0.0001$ ) were observed in SenE vs SennonE.

The increased frequency of abnormal laboratory parameters of renal function and carbohydrate metabolism is a risk factor for the occurrence of sodium and potassium disturbances in elderly patients.

**Keywords:** lectrolyte disturbances, sodium, creatinine, eGFR,

## Is there a place of EBUS-TBNA in the diagnosis of sarcoidosis?

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Endobronchial ultrasound transbronchial needle aspiration (EBUS-TBNA) is a new diagnostic tool used in the diagnostic of mediastinal lymph nodes and peripheral lung lesions. The diagnosis of sarcoidosis, although mainly based on clinical and HRCT findings, in some cases, requires cytopathological confirmation .

The aim of the study was to evaluate the utility of EBUS-TBNA in the diagnosis of sarcoidosis.

The retrospective study included 407 patients who underwent EBUS-TBNA in the Department of Lung Diseases and Tuberculosis in Zabrze between 01.2012 - 12.2016 (80% men, 53 years  $\pm$  15). Demographic data, initial diagnosis, macroscopic image of bronchoscopy, cytological results of the samples and final confirmation of clinical diagnosis were assessed.

The initial indication for EBUS-TBNA was: suspicion of sarcoidosis 35%, mediastinal lymphadenopathy 24%, infiltratins and tumors of the lung 19%, micronodular/interstitial lesions 17%, suspicion of metastais or recurrence 3% and other 1%. Overall diagnostic confirmation of initial diagnosis was obtained in 51% of cases, including suspicion of sarcoidosis in 88 patients (62%), lung cancer in 64 patients (32%), and other 51 (25%). Diagnosis of sarcoidosis was also confirmed in EBUS-TBNA performed due to: mediastinal lymphadenopathy (28/97; 29%), micronodular lesions (13/71; 18%) and lung tumours (3/75; 4%).

In our study the utility of EBUS-TBNA in diagnosis of sarcoidosis has been proved.

**Keywords:** e-cigarette, smoking, nicotinism, lung disease



## **Assessment of the probability of lung cancer diagnosis using authorial predictive scale. Pilot study**

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Bronchoscopy is a standard lung cancer diagnostic tool. Lack of unified descriptions might be the cause of the difficulties with interpretation and delay in planning further diagnostic steps.

The goal of this study was to assess the accuracy of department's bronchoscopy descriptions and to validate proposed 1-7pts risk scale, which was based on presence and character of infiltration and performed procedures.

Materials 197 bronchoscopy descriptions were analyzed in patients suspected of lung cancer who were admitted to Pulmonology Ward in Katowice, from January 2015 to October 2016. Descriptions were divided based on intrabronchial images and performed medical procedures into 7 groups. The average age was 65 years old (range: 23-87).

The samples for histopathological examination were taken from 89 patients. 36 of samples were positive for cancer. Depending on a group, the likelihood of lung cancer was: 1st group (0%), 2nd (0%), 3rd (10.5%), 4th (36.8%), 5th (0%), 6th (58%), 7th (76.5%). Squamous type was the most often diagnosed lung cancer. Qualification to 5th group in further examination confirmed tuberculosis. Probability of lung cancer diagnosis increased along with the amount of collected samples. In cases with  $\geq 5$  samples taken the likelihood for cancer diagnosis was: 3(50%), 4(50%), 6(83%), 7(91%).

Unification of bronchoscopy descriptions could be useful to predict, whether a collected tissue biopsy taken during bronchoscopy will be positive for lung cancer. Proposed risk scale requires simplification and further validation in prospective study.

**Keywords: bronchoscopy, lung cancer, oncology**

## Is it possible to predict, whether BAL is going to be diagnostic? Pilot study

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Bronchoalveolar lavage (BAL) is used in diagnosis of interstitial lung diseases. BAL is diagnostic when  $\geq 60\%$  of the instilled volume is recovered. There are no reliable markers useful to predict, whether BAL volume is going to be diagnostic.

Our goal was to search for pulmonary function markers, which could anticipate whether the recovered volume of instilled fluid will be  $\geq 60\%$  of administered volume.

BAL volumes and quality were analyzed in the context of patient's disease, medical condition and lung function test results in patients hospitalised at the Pulmonology Ward of UCK in Katowice, from January 2015 to October 2016. Patient's main age was 57 (18-89).

Among 161 procedures, diagnostic BAL ( $\geq 60\%$ ) has been obtained in 105 cases. We cut out results of physician who had statistically significant lower BAL volume recovery than other physicians. The analysis of a subgroup of 79 patients with interstitial lung disease confirmed that there is a correlation of decreasing BAL recovered volume with FEV1/FVC decrease ( $r=0.24$ ) and increase of: RV[L] ( $r=-0.32$ ), RV[%] ( $r=-0.36$ ), RV/TLC[L] ( $r=-0.34$ ) i RV/TLC[%] ( $r=-0.40$ );  $p<0,05$ . There was no significant correlation with DLCO. RV/TLC[%] was the parameter with the highest predictive value for anticipating correct BAL recovery. Receiver operating characteristic (ROC) curve analysis showed diagnostic accuracy (AUC 0.73, 95% CI 0.61-0.86).

Pulmonary hyperinflation and bronchial obstruction may have a predictive role anticipating proper recovery of BAL fluid volume. It is necessary to perform a multicenter randomized controlled trial, in order to verify our observation.

**Keywords: bronchoscopy, interstitial lung disease, BAL**

## Should we recommend e-cigarette to our patients? - analysis of short-term health effects of e-smoking

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The emerging evidence indicates that the increasing popularity of e-smoking creates a potentially new challenge for public health. Because of the short length of time that e-cigarettes have been available, approximately 10 years, the long-term health effects of e-smoking are not yet known.

The aim of the study was to assess the influence of cigarette and e-cigarette smoking on human health, with special emphasis on respiratory system symptoms.

A population based survey in a group of 2900 students from three Universities in Katowice, Poland. We used previously validated, created for the purpose of the study, questionnaire focused on cigarette and e-cigarette smoking habits.

The data were obtained from 2242 students aged  $21.5 \pm 2.2$  y-rs: 1531 female and 711 male with the response rate 77.3%. Traditional tobacco cigarette (T) smoked regularly 15.8% of respondents, and 3.6% declared e-cigarette (E) smoking. As the most common immediate short-term effects of e-cigarette smoking respondents indicated: sore throat - 29.2% (T:29.3%;  $p=0.9$ ), cough - 25.6% (T:30.9%;  $p=0.3$ ), and shortness of breath - 12.2% (T:4.7%;  $p=0.01$ ). Tobacco smokers more often observed dizziness - 36.9% (E:13.4%;  $p<0.001$ ), headache - 22% (E:7.3%;  $p=0.002$ ) and bad taste in the mouth - 53% (E:7.3%;  $p<0.001$ ). Among 53 dual smokers - e-cigarette more often caused breathless (E:15%; T:3.7%;  $p=0.04$ ) and sore throat (E:26.4%; T:22.6%;  $p=0.6$ ) than tobacco cigarette.

Conclusions: Due to the high frequency of cough and breathlessness after use of e-cigarette, there is a need to further research to investigate the potentially influence of e-smoking on development of lung diseases.

**Keywords: e-cigarette, smoking, nicotine, lung disease**

## The Mystery of Diving and Heart Beats

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Despite many studies that have been conducted so far regarding the physiology of diving, many mechanisms have not been discovered yet. The growing popularity of this kind of sport activities enforces the need for conducting studies that will enable to understand better the changes in the human body during diving. There are only few studies in the literature about the mechanisms regulating the functions of the cardiovascular system during diving.

Analysis of the impact of the temperature and pressure of the water environment on systolic and diastolic left ventricular function during diving in cold and warm water.

The study involved 30 healthy divers actively engaged in recreational diving. Patients were divided into three equal groups with different levels of diving experience (A: > 1000 dives, B: > 100 dives, C: < 50 dives). The study was conducted during a 7-day diving expedition. During five days 4 dives per day were done, both in warm and cold water with intervals of two hours. Before each immersion and after surfacing echocardiography was performed evaluating morphological parameters (LVID, RVID) and systolic (strain, tissue tracking,) and diastolic function (transmitral flow velocity, E/E' to estimate LV filling pressures).

Significant correlation between depth of immersion and changes in morphology, transmitral flow velocity was found. There was no significant impact of pressure on global longitudinal strain, tissue tracking after immersion in cold water.

Recreational diving due to short-term changes in left ventricular diastolic function, depending on the pressure (depth) dives.

**Keywords: diving, heart, temperature, pressure**

## Evaluation of HE4 concentration in selected noncancerous liver diseases

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Apart from primary liver cancer, evaluation of CA 125 concentration carries significant diagnostic importance in other diseases, i.e endometrial cancer and liver pathologies. One of the recently detected cancer markers is HE4. It has been used for detection of ovarian cancer. However it's higher levels were observed in fetal umbilical cord blood, women with encyesis, gestational hypertension, embroiled pregnancy, diabetes mellitus.

To determine, whether the CA 125 and HE4 plasma concentrations are elevated in noncancerous liver diseases.

The study included 30 patients from Internal Medicine Ward, St, Barbara's Hospital in Sosonowiec, who were diagnosed with hepatitis B and C, and alcoholic cirrhosis. All of the patients have had CA 125 and HE4 levels determined in blood serum using commercial ABOTT kits. HE4 concentration was marked with chemiluminescence method using Architect i100 device by ABOTT.

CA 125 (avg: 105,5 U/ml, SD= 103,2) and HE4 (avg: 173,9 pmol/l, SD=198,9) concentrations were elevated in patients with hepatitis B and C. Levels of CA 125 (avg: 88,3 U/ml , SD= 107,2) and HE4 (avg:160 pmol/l (SD= 113,4) in patients with alcoholic cirrhosis were also elevated.

1. HE4 is not a specific marker for ovarian cancer, it's concentration is elevated in the blood of patients suffering from selected noncancerous liver diseases. 2. High sensitivity of HE4 marking may point out it's usefulness in diagnosing and monitoring treatment effectiveness in patients with noncancerous liver diseases.

**Keywords: HE4, CA 125, hepatitis, liver cirrhosis**

## What do eyes and blood pressure have in common?

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Glaucoma is an optic nerve neuropathy, that is one of the most common causes of vision loss worldwide. The etiology still remains unknown, but ocular perfusion pressure (OPP) is claimed to be one of the risk factors. Diastolic OPP(DPP) is calculated using formula:  $DPP = \text{diastolic BP} - IOP$ .

The aim of this work is to evaluate the relationship between DPP and progression of primary open angle glaucoma (OAG). Furthermore, the work aims to underline the problem of patients with OAG and low BP or using antihypertensive medications.

A survey included 18 patients (36 eyes) treated because of OAG in Ophthalmology Clinic. The excluding criteria were: age  $\geq 70$ , refraction error  $\geq 4$  D, presence of significant cardiovascular diseases, anti-glaucoma surgery. IOP was measured once, BP was checked twice and mean value was calculated. Visual field test was used in order to check out progression of OAG. Global indices such as mean defect (MD) and loss variance (LV) were used. The data was elaborated by Chi<sup>2</sup> test using Statsoft Statistica.

We divided the eyes into two groups. The first with high DPP  $\geq 60$  and second with low DPP  $< 60$ . In both groups we compared the relationship between value of DPP and progression of OAG.

In the first group there were 25 eyeballs, 32% (n=8) with progression and 68% n=17 without it. In the second group there were 11 eyeballs, 81,82% (n=9) with progression and 18,18% (n=2) without it. The results were statistically significant (p=0,00581).

Patients with low DPP significantly often present progression of primary OAG than patients with higher DPP. The treatment of patients with OAG and hypertension should include the estimation of DPP.

**Keywords:** glaucoma, ocular perfusion pressure, diastolic perfusion pressure

## **Autologous hematopoietic stem cell transplantation (AHSCT) for poor risk systemic sclerosis (SSc)**

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Systemic sclerosis (SSc) is an autoimmune disease affecting skin and internal organs. Due to the lack of effective disease-modifying drugs, SSc was one of the first autoimmune disorders challenged with autologous hematopoietic stem cell transplantation (AHSCT).

To evaluate the long-term efficacy of AHSCT in patients with poor risk SSc. Material and methods: We retrospectively assessed the results of AHSCT in 18 patients with SSc autografted in years 2003-2016. The following parameters were evaluated for efficacy before and 12 months after procedure: 1/ cutaneous involvement using modified Rodnan skin score (mRss), 2/ lung function measured by diffusing capacity of lung for carbon monoxide (DLCO) and forced vital capacity (FVC), and 3/ cardiac function assessed by left ventricular ejection fraction (LVEF).

Study group consisted of 10 male and 8 female with median age of 52 years (range 24-68). Median disease duration from diagnosis to AHSCT was 14 months (range 2-85). The transplant-related mortality at 100 day was 22%. After median follow-up of 47.5 months (range 0-95), 11 patients were alive. In this group mRss showed a significant reduction from the baseline at 12 months after transplant ( $P < 0.01$ ). There was no significant change in lung function (measured by DLCO and FVC;  $P = 0.62$  and  $P = 0.37$  respectively) and LVEF ( $P = 0.56$ ). During follow-up 5 patients had a SSc progression, however all of the patients required immunosuppressive treatment.

AHSCT for SSc is associated with a significant transplant-related mortality and short-term efficacy.

Systemic sclerosis, autologous hematopoietic stem cell transplantation, autoimmune diseases therapy.

**Keywords: systemic sclerosis, stem cell, transplantation, autoimmune diseases therapy**

## The risk of diabetes mellitus type 2 based on the Findrisk scale

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Diabetes causes blood glucose levels to rise higher than normal. Type 2 diabetes is the most common form of diabetes. Patients' body with diabetes type 2 does not use insulin properly (insulin resistance). Pancreas makes extra insulin to make up for it.

The aim of the study is to evaluate the risk of diabetes mellitus type 2 with using the Findrisk scale.

Diagnostic survey tool: Findrisk scale. The survey included 8 single choice questions.

Total of 47 subjects were tested, with an age range 65. Men with normal BMI predominated in the study, but with increased waist circumference. The subjects were eating fruit every day. No diabetes was diagnosed in the study group, nor was there a family history of the disease.

Patients in spite of exercise and healthy diets have a high risk of developing diabetes mellitus. This may indicate other risk factors than diet and exercise. Early detection of diabetes mellitus should also be introduced.

**Keywords: diabetes, occurrence, Findrisk scale**



## The assessment of the cognitive functions and quality of life among patients with renal insufficiency on hemodialysis

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Cognitive impairment is common, yet underestimated, in individuals with chronic kidney disease (CKD), particularly among those on dialysis, and it may substantially affect their quality of life. Metabolic abnormalities associated with renal failure and cerebrovascular dysfunction are considered as the major factors contributing to the cognitive impairment.

The assessment of basic cognitive functions, quality of life (QoL) in patients on hemodialysis.

31 patients (15M/16F, aged 24-96 years) on hemodialysis for  $30,5 \pm 78,3$  months were included in the study. Cognitive functions were examined with Mini-Mental State Examination (MMSE), Clock-Drawing Test (CDT), Symbol Digit Modalities Test (SDMT) and QoL with WHOQOL-BREF questionnaire.

The mean MMSE test score was  $26.19 \pm 4.69$  points (54.8% < 27 points, 12% < 24 points). The result of CDT ranged from 3 to 10 ( $8.81 \pm 2.29$ ). The SDMT varied from 3 to 52 ( $34 \pm 12,81$ ) points (32% < 31 points). The average score of WHOQOL-BREF in all domains was  $90.52 \pm 10.92$  points. Duration of hemodialysis did not correlate with the results of neuropsychological and QoL tests. Positive correlation ( $r=0.46$ ,  $P=0.041$ ) was observed between SDMT score and "Physical health" domain in WHO-BREF. Diabetes was diagnosed in 35.5%, ischemic heart disease in 45.2%, hypertension in 67.7%, secondary anemia in 41.2% of patients. The mean score of SDMT was significantly lower for patients with diabetes ( $P=0.013$ ).

Kidney disease and dialysis significantly affect cognitive function and quality of life. Concomitant diseases may further contribute to cognitive impairment.

**Keywords: hemodialysis, cognitive functions, neuropsychological tests**

## Serum vitamin B12 concentration in elderly patients with atherosclerosis

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Vitamin B12 deficiency is common in elderly people. It influences on hematological changes and also leads to hyperhomocysteinemia – established risk factor for atherosclerosis. THE

Evaluation of serum vitamin B12 concentration (B12) and complete blood count (CBC) in elderly patients.

Among 1010 people hospitalized in 2016 in the Department of Internal Medicine in Bytom, the study comprised 567 elderly patients (WHO) - 315 females and 252 males, range of 65-98 years (mean age of 76,8 years). It was analyzed CBC and vitamin B12 concentration in two groups: seniors with atherosclerosis (SenA) and seniors without atherosclerosis (SennonA). Statistical analyzes were performed with Statistica for Windows 12.5.

32,4% of all hospitalized patients constituted group SenA. In elderly patients median B12 was 320.1 pg/ml (interquartile range 216,9-455,5 pg / ml). 7.6% of SenA had vitamin B12 below the reference values. The concentration of vitamin B12 ( $p = 0.02$ ) was significantly lower in SenA vs. SennonA. CBC did not differ significantly in analyzed groups. In the SenA positive correlation were found for B12 and: the number of red blood cells ( $p < 0.05$ ,  $R = 0.2947$ ), hemoglobin concentration ( $p < 0.05$ ,  $R = 0.2747$ ) and hematocrit level ( $p < 0, 05$ ;  $R = 0.2775$ ), whereas in SennonA group, B12 correlated positively with the amount of white blood cells ( $p < 0.05$ ,  $R = 0.3874$ ).

Vitamin B12 deficiencies are more common in people with atherosclerosis, also in the group of seniors. It is worth to monitor serum vitamin B12 concentration in the elderly before hematological symptoms occur.

**Keywords: vitamin B12, elderly, atherosclerosis, complete blood count**

## Knowledge of Polish medical students about digital rectal examination – multicenter study

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The Digital Rectal Examination (DRE) is an important element of a physical examination. Proper technique of DRE should be mastered during medical studies. However, there is a general opinion that this skill is insufficiently acquired during studies.

The aim of the study was to assess the knowledge and competence of Polish medical students in performing the DRE.

The electronic survey has been conducted XI-XII 2016 using an anonymous multiple-choice questionnaire. It was sent to students from 11 Polish medical universities. Queries concerned practical and theoretical knowledge about DRE. Three questions were carried out in self-assessment form in 5-step scale and concerned practical knowledge, interpretation skills and valuation of usefulness of DRE.

Out of 973 students who responded to the survey 62,3% students had never performed DRE on a patient. 14,9% out of sixth-year-students were not taught this skill during their curriculum. The most frequent cause of not performing DRE was a lack of opportunity to perform it during the course of study, which occurred in 55,6% of the cases. The majority of students assessed the usefulness of DRE as “high” or “very high” (55,7%); however, practical knowledge (in 39,7%) and interpretation skills (in 39,5%) were identified as “very low”. 78,6% of the responders could not recognize which anatomical structures can be palpated in DRE. 36,9% students did not know that the DRE could be carried out by every doctor, regardless of their specialization.

The results show that students' knowledge about DRE is on an insufficient level. Medical schools should evaluate the proficiency and improve the competence.

**Keywords:** digital rectal examination, DRE, students, clinical skills

## Clinical characteristic of patients after organ transplantation with *Clostridium difficile* infection

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*Clostridium difficile* infection (CDI) seems to be a serious complication in patients after organ transplantation, however not well explored.

The aim of this study was to analyze the clinical manifestations of CDI in patients after organ transplantation.

Retrospective analysis included 126 patients after organ transplantation treated with antibiotics and hospitalized in our Department. Patients with CDI infection (n=18) were compared to patients whom CDI had not occurred (n=108). The statistical analysis was performed using tests: chi<sup>2</sup> and the Mann-Whitney U test.

Before hospitalization patients from CDI group were more often treated with antibiotics (83.3% vs 47.2%; p=0,0045). In CDI group 50 % patients were treated with more than one antibiotic compared to 14% in non-CDI group (p=0.0003). In CDI group more often used group of antibiotics were: cephalosporins (28% vs. 9%; p=0.0026), carbapenems and monobactams (39% vs. 8%; p=0.0001), fluoroquinolones (50% vs 10%; p=0.00001) and aminoglycosides (11% vs 2%; p=0.039). CDI was more common among patients above 70 years (17% vs 1%; p=0,0004). In CDI group lower serum protein concentration ( $48.2 \pm 9.5$  g/L vs.  $56.3 \pm 7.8$  g/L; p=0.001) and increased white blood cell count ( $17.0 \pm 18.0$  vs.  $8.4 \pm 5.0$  10<sup>9</sup>/l ; p=0.027) were found.

1. *Clostridium difficile* infection is more common in organ transplant patients previously treated with more than one antibiotic, older than 70 years, with hypoproteinemia and leukocytosis. 2. Such a clinical characteristic of patients with CDI should be very useful for both prophylactic and diagnostic procedures in patients after organ transplantation.

**Keywords:** *Clostridium difficile*, transplantation, risk factors

## **Evaluation of vitamin D3 serum concentration in patients with liver inflammatory diseases**

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The prevalence of clinical vitamin D deficiency is high in many parts of the world. Its deficiency has been revealed in most patients with chronic inflammatory liver diseases. Plasma 25-hydroxyvitamin D concentration (25(OH)D) is a useful risk marker of clinical vitamin D deficiency. Vitamin D has immunomodulatory, anti-inflammatory and antifibrotic properties, which are relevant in the treatment of many causes of chronic liver diseases.

The aim of the study is to estimate the concentration of vitamin D3 level in patients with identified liver diseases.

This study included 40 patients. Patients were classified into two groups containing 20 patients diagnosed with hepatitis B or C, the remaining 20 autoimmune hepatitis, chronic hepatitis and alcoholic. Patients of both groups were in a similar age (31-62 years, the average age in the first group X1 = 48.6 years, and in the second group X2 = 49.2). The control group consisted of 15 healthy volunteers in the similar age. Patients were diagnosed during hospitalization. The results were statistically analyzed.

The average concentration of vitamin D3 in patients with chronic hepatitis B and C was 11,09 and it was statistically lower than in group II patients with other inflammatory diseases of the liver, in which the mean concentration was 14,57. Concentration in group II was lower when compared with control patients.

All patients, both selected liver inflammatory diseases and a control group are insufficient in vitamin D3, Statistically significant lower concentration of vitamin D3 in patients with viral hepatitis shows that a history of inflammation of the liver deepens deficiency of vitamin D3.

**Keywords: clinical vitamin D deficiency, plasma 25(OH)D concentration, liver diseases**

## The incidence of adrenal gland insufficiency in patients with liver cirrhosis before liver transplantation

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Liver cirrhosis (LC) may impair a function of endocrine organs. Endocrine abnormalities may increase morbidity and mortality in patients with LC.

To assess the prevalence of adrenal gland insufficiency (AGI) in patients with LC who undergo examinations for liver transplantation and its correlation with selected laboratory parameters.

Fifty nine LC patients (17F/42M) in age  $51 \pm 13$  years and 59 control subjects without liver diseases (18F/41M) in mean age  $46 \pm 17$  years were included into the study. The etiology of LC was alcoholic liver disease in 24 patients, viral hepatitis in 20 patients, autoimmune diseases in 10 patients and other causes in 5 patients. AGI was defined as a total morning serum cortisol concentration below  $5\mu\text{g/dL}$ .

In comparison to control subjects LC patients are characterized by significantly lower total morning serum cortisol concentration ( $11.2 \pm 6.4$  vs  $16.0 \pm 5.3$   $\mu\text{g/dL}$ ,  $p < 0.0001$ ) and significantly higher AGI prevalence (17% vs 0%,  $p < 0.0001$ ). According to LC etiology AGI was diagnosed in 56%, 15% and 8% of patients with autoimmune, viral and toxic liver diseases, respectively. A significant positive correlations between serum cortisol concentration and number of blood platelets ( $R=0,28$ ;  $p=0.03$ ), serum albumin concentration ( $R=0,28$ ;  $p=0,03$ ) and negative correlation between serum cortisol concentration and INR ( $R= -0,3$ ;  $p=0,02$ ) have been shown in the LC patients.

1. Patients with LC are characterized by high prevalence of AGI. 2. The etiology of LC may have a significant impact on adrenal function. 3. Results of our study seem to have not only a diagnostic but potentially also therapeutic applications.

**Keywords:** liver cirrhosis, adrenal gland insufficiency, serum cortisol concentration, INR

## **Selected parameters of immune response in women with systemic lupus erythematosus**

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Systemic lupus erythematosus (SLE) is a chronic connective tissue disease with autoimmune background which has periods of exacerbation and remission.

Measurement concentrations of immunoglobulin M (IgM), G (IgG) and neopterin (NPT) in blood serum.

The studied group included 15 women with SLE aged 22 to 53 ( $38\pm 7,98$ ) years, who were hospitalized in Department of Internal Medicine and Rheumatology, Medical University of Silesia in Katowice. SLE was confirmed by clinical and diagnostic criteria based on organs and skin changes and results of laboratory tests. Disease activity was determined according to the SLEDAI scale. The control group included 15 women aged 21 to 50 ( $38,5\pm 7,7$ ) years old, who honorably donated blood in Regional Blood Center in Katowice. Assays were performed in the remains of blood serum after routine laboratory tests. The concentrations of IgM and IgG were measured by immunoturbidimetric methods. The concentration of NPT was measured by ELISA test.

The concentration of IgM was significantly lower in the studied group ( $0,88\pm 0,34$  g/l,  $p<0,01$ ) than in the control group ( $1,39\pm 0,57$  g/l) as well as the concentration of NPT, which was significantly lower in the studied group ( $2,62\pm 1,28$  ng/ml,  $p<0,001$ ) than in the control group ( $4,4\pm 1,18$  ng/ml). Changes in concentration of IgG between the women groups were not observed ( $p>0,05$ ). There were no correlations between disease activity and concentrations of studied parameters.

Changes in immune system which are observed in SLE result in different concentrations of IgM and NPT in patients' blood serum.

**Keywords:** SLE, immunoglobulin M, immunoglobulin G, neopterin

## Evaluation of the disease course of ankylosing spondylitis with the Flare Illustration Toolmat

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Ankylosing spondylitis (AS) is an arthritis that primarily affects the spine. The disease causes inflammation of intravertebral joints. It's course differs in patients, some experience rather constant symptoms while others admit long remissions. Flare Illustration Tool was invented in order to better describe disease patterns.

Characteristics of disease flares in population with ankylosing spondylitis.

90 patients (49 female, 41 male) with AS were asked to fill up a survey which consisted of 3 parts, specifics of their disease, Flare Illustration Tool and BASDAI (Bath Ankylosing Spondylitis Disease Activity Index).

Flares were present in 85 patients (94%). In most cases a flare showed up once in 3 months and it usually lasted up to 14 days (26). At the moment of diagnosis of AS, disease pattern B (short flares with constant symptoms in between flares) and D (long-lasting flares with constant symptoms in between flares) occurred the most frequently (55). Pattern F (constant symptoms without flares) was also common (20). Patterns with intermittent symptoms (A, C) were less frequent (13). Mainly pattern B (43) was declared in the last 12 months. The disease pattern is not constant - in 57% of patients it shifted during the disease course.

The majority of AS patients experience flares. The disease pattern has two main types (B and D). Shifts of the disease pattern are common. In most cases of changes pattern D switches to pattern B.

**Keywords: ankylosing, spondylitis, flare**



## **Glycemic target achievement in patients with type 1 diabetes in the university clinic setting in Poland**

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Management of type 1 diabetes(T1D) requires monitoring metabolic parameters.

The aim of our study was to describe changes in the prevalence of patients reaching therapeutic goals in 2011 and 2016.

In retrospective cross sectional study we collected data from Department of Metabolic Diseases patients. We included 381 T1D patients diagnosed in 2009 and before, treated with multiple daily insulin injection(MDI) or at least 6-month continuous subcutaneous insulin infusion(CSII). Pregnant women were excluded. The study sample was: outpatient clinic 2011 (130 patients) and 2016 (251 patients). Mann-Whitney U and chi-square test were used to check the frequency of reaching therapeutic goals: HbA1c, LDL-cholesterol(LDL), blood pressure(BP), all of them together(HHHgoal). Logistic regression model was used to identify predictors of reaching HbA1c goal.

In 2016 as compared to 2011 the patients were younger(32 vs 34,5 years p,001), duration of diabetes was shorter(18 vs 20 years p,001), more CSII patients(70,9 vs 48,5% p,001), daily dosage of insulin was lower(median 0,6441 vs 0,7047U/kg/d p,005), prevalence of hypoglycemia below 70 mg/dl and below 55 mg/dl was higher(89,1 vs 72,1% p,000; 68 vs 52,2% p,004), less patients achieved LDL and HHH goal(15,9 vs 54,8% p,001; 8,3 vs 25,8% p,001). There was no difference in the percentage of patients achieving HbA1c goal(56,8 vs 61% p,445) in 2016 and 2011. Logistic regression model for the whole study group showed that females(OR 2,97 p,001) and CSII patients(OR 1,86 p,005) are more likely to achieve HbA1c goal.

There was no improvement in any of treatment goals between 2011 and 2016.

**Keywords: metabolic diseases, type 1 diabetes, treatment target, insulin pump therapy**

## The evaluation of IGRA Test suitability (Quantiferon TB Gold) in terms of diagnosis of TB disease

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IGRA Test constitutes a golden standard in diagnosing infections with tubercle bacillus. However, the role of the IGRA Test appears to be controversial. Despite having conducted a number of research indicating that the test might seem insignificant in terms of diagnosis of TB disease, the test is applied by many practitioners.

The aim of the test was the attempt to estimate the diagnostic suitability of IGRA Test in diagnosis of patients affected with tuberculosis.

The retrospective study has been carried out during which medical records of 184 patients have been analysed. These patients have been hospitalized at Pulmonology Departem of Medical University of Silesia in Katowice within the period of three years-between January 2014 and January 2017. The patients have been tested via IGRA Test in diagnosis of TB disease. The study group consisted of 87 women (47.2%) and 97 men (52.8%).The average age of patients (+/- standard deviation) was 62.79 +/- 15.57.

The IGRA Test for the patients diagnosed with TB with bacteriological confirmation was positive for 3, while negative for 2 patients. For 1 patient diagnosed with TB without bacteriological confirmation the IGRA Test was negative. Hence, the IGRA Test for all patients diagnosed with TB was positive for one half (3 patients) and negative for another (3 patients).

Our results suggest that there is lack of significance of the IGRA Test in terms of diagnosis of TB disease. However, due to the low number of patients diagnosed with TB and retrospective nature of the study it is indicated to conduct prospective study on a larger population of patients diagnosed with TB.

**Keywords: tuberculosis, Interferon-Gamma Release Assay, IGRA, Quantiferon**

INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF TRANSPLANTOLOGY**

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## **The evaluation of the risk factors of acute kidney injury after Orthotopic Liver Transplantation.**

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**Introduction:** Acute kidney injury (AKI) is a frequent complication after orthotopic liver transplantation (OLTx) and it ranges from 40-70%. Impaired renal function is associated with prolonged hospitalization, increased mortality and risk of chronic renal failure in the late post-OLT period.

**Aim of the study:** The aim of the study was to determine preoperative as well as intraoperative risk factors of AKI occurrence in patients after OLTx.

**Materials and methods:** It was a single-centre, retrospective registry of 90 patients who underwent the OLTx between 2013 and 2015 years in Clinical Department General, Vascular and Transplant Surgery in Katowice. The intraoperative data were collected from anesthesia carts and other data from medical histories. The statistical analysis was performed using proper tests.

**Results:** The mean age was 49 years old with males domination (60%). AKI occurred in 58% (n=52) of patients. In the results the most important preoperative factors were levels of: prothrombin (OR=0,96, p=0,002), INR (OR=4,8, p=0,01), hemoglobin (OR=0,79, p=0,02), Na (OR=0,89, p=0,03) and toxic etiology (R=4,6, p=0,03). From intraoperative factors crucial were: minimal level of hemoglobin (OR=0,61, p=0,007), units of cell-saver (OR=1,12, p=0,01) and red cell mass (OR=1,19, p=0,02) transfusions. From the area under curve (AUC) the cut-off points were estimated for each significant variable. In multivariate analysis the most important factors turn out: INR > 1,38 (OR=6,48, p<0,001) and minimal hemoglobin during operation <6,4 g/dl (OR=7,25, p<0,001).

**Conclusions:** The most important risk factors of AKI after OLTx are: INR with cut-off point >1,38 before surgery, toxic etiology of liver failure, and minimal intraoperative hemoglobin level < 6,4 g/dl.

**Keywords:** AKI, OLTx

## **Preoperative high level of bilirubin and postreperfusion syndrome as the main risk factors of primary graft dysfunction after Orthotopic Liver Transplantation (OLTx).**

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**Introduction:** Primary graft dysfunction (PGD) is a multifactorial syndrome with great impact on liver transplantation outcomes. PGD is related to ischemia-reperfusion injury to the transplanted organ and may be subdivided into early allograft dysfunction (EAD) and primary nonfunction (PNF).

**Aim of the study:** The aim of the study was to determine preoperative and intraoperative risk factors of primary graft dysfunction occurrence.

**Materials and methods:** It was a single-centre, retrospective registry of 90 patients who underwent the OLTx between 2013 and 2015 years in Clinical Department General, Vascular and Transplant Surgery in Katowice. The intraoperative data were collected from anesthesia carts and other data from medical histories. The statistical analysis was performed using proper tests.

**Results:** The mean age was 49 years old with males domination (60%). Primary graft dysfunction has occurred in 13% (n=12) of patient and PNF made up 5,5% (n=5), EAD 7,5% (n=7). In the results the most important preoperative factors of PGD were: MELD (OR=1,11, p=0,01), and bilirubin level (OR=1,01, p<0,001). From intraoperative variables crucial were: minimal level of hemoglobin (OR=0,59, p=0,04), units of red cell mass transfusions (OR=1,16, p=0,04) and percent of MAP variability after reperfusion (OR=0,94, p=0,03). From the area under curve (AUC) the cut-off points were estimated for each significant variable. In multivariate analysis the most important factors turn out: postreperfusion syndrome (OR=5,02, p=0,01) and preoperative bilirubin level  $\geq 17$  mg/dl (OR=20, p<0,001).

**Conclusions:** The main risk factors of primary graft dysfunction after OLTx are preoperative bilirubin level  $\geq 17$  mg/dl and postreperfusion syndrome.

**Keywords:** OLTx, PNF, EAD, postreperfusion syndrome

## **Short-term outcomes of lungs transplantation: comparison of ideal, standard and extended lung donors – single center study**

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**Introduction:** Lung transplantation (LTx) is limited by a shortage of suitable donors. Many transplant programs have changed their primal ideal donor criteria to overcome significant organ shortage. Nowadays the lungs from extended criteria donors are admitted to use.

**Aim of the study:** Retrospective comparison of short-term (72h) lung transplantation outcomes between the following groups of acceptable criteria: ideal, standard and extended; evaluation of the short-term (72h) results of LTx.

**Material and methods:** The authors analyzed the medical records of 46 recipients who underwent successful LTx conducted between February 2014 and January 2017 in Department of transplantology in The Silesian Center for Heart Diseases in Zabrze and corresponding medical records of lungs received from donors in the same institution. 5 patients received organs from “extended donor criteria”, 23 patients from “standard donor criteria” and 15 patients from “ideal donor criteria.” Recipients' and donors' demographics, perioperative variables and the outcome were compared.

**Results:** Preliminary results shows that there were no significant differences observed in recipients' prevalence of primary graft dysfunction (PGD) grade 3, duration of mechanical ventilation, length of stay, prevalence of rejection nor bronchiolitis obliterans syndrome (BOS).

**Conclusions:** Donor lungs beyond the range of ideal criteria have an acceptable survival during the short-term follow-up. Liberalization of donor criteria can significantly increase the number of lung transplantations. Short and long-term outcomes after using extended criteria donors should be furtherly observed and investigated on.

**Keywords:** Lung transplantation, extended criteria donors, evaluation of the short-term, ideal donor, extended donor, standard donor

## **Acinetobacter baumannii infections during immunosuppression after lung transplantation - single centre study.**

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After 30 years, the lung transplantation became the common treatment, widely considered for patients with chronic, end-stage lung disease. Despite better outcomes pulmonary infections remains a major problem in worsening risk stratification.

Our aim was to assess whether infection caused by *Acinetobacter baumannii* has impact on mortality after lung transplant.

In our retrospective study we analyzed 110 recipients of lung transplantations performed between July 2002 and June 2016 in the Transplantology Unit, Silesian Center for Heart Diseases in Zabrze. From the patients' charts we gathered information about age, sex, underlying lung disease, date and type of procedure. Data pertaining to the all-cause mortality were obtained from the hospital's medical records. Microbiologic evaluation included the presence of infection, bacterial species in recipients and donors as well as type of biological material.

During a mean hospitalization time of 56 days (range 4-398 days) 76 patients (69%) were diagnosed with bacterial infection. There were 108 bacteria isolated from bronchialveolar fluid, 17 from blood, and 7 from BAF and blood simultaneously. *Acinetobacter baumannii* infection occurred in 25 patients (23%). Patients with *Acinetobacter baumannii* had lower probability of survival, than the rest of the population ( $p < 0,05$ ). Main source of infections are donor's graft.

Infections with *Acinetobacter baumannii* during hospitalization after lung transplantation appear to be major clinical problems. The treatment strategy during harvesting and during perioperative period might be reevaluated.

**Keywords: lung transplant, infections, acinteobacter baumannii, mortality**



## **Impact of National Medicine Transplant Programs implementation in Poland on amount of lung references, qualifications and transplantations performed in Silesian Center for Heart Disease in Zabrze**

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**BACKGROUND:** In 2010 National Medicine Transplant Program, a system of allocating organs for transplantations was introduced in Poland. We intent to name the effects of the program on lung references, qualification and successful transplantation and determine the crucial points to be improved.

**METHODS:** Silesian Center for Heart Disease data on referred and qualified patients were analyzed for 5 calendar years before implementation of the National Medicine Transplant Program (2004-2009) and compared with data of 6 calendar years after the implementation (2010-2016). The rates of references, qualifications and transplantations within each period were compared.

**RESULTS:** After the implementation of the National Medicine Transplant Program the number of average annual references, qualifications and lung transplants increased respectively by 357%, 242% and 331%, despite no significant increase in number of lung donors; Authors observed also noticable increased average age of lung recipients and change of the distribution of recipients diagnoses between those periods: before and after the implementation of the National Medicine Transplant Program: significantly more patients with fibrotic lung disease.

**CONCLUSIONS:** The National Medicine Transplant Program turned out to be moderately successful, increasing the final numbers of successfully operated patients. However, there is a prominent difference between the number referred and accomplished operations. Moreover, the number of performed transplantations is obviously too low in comparison to the demands. The National Medicine Transplant Program should be continued with introduction of some changes considering these problems.

**Keywords:** National Medicine Transplant Program, lung transplant references, lung transplant qualifications, lung transplantations, Silesian Center for Heart Disease in Zabrze

## **Immunosuppressive maintenance treatment and its impact on the occurrence of selected atypical infections among lung transplant recipients of Silesian Center for Heart Diseases in Zabrze (SCCS) between 2012-2016.**

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**INTRODUCTION** Immunosuppressive maintenance therapy after lung transplant allows to achieve long-term survival of the recipient. It also increases the risk of developing atypical pneumonia. Immunosuppressive maintenance regimens of SCCS are based on calcineurin inhibitors, such as Cyclosporin (CSA) and Tacrolimus./ **THE AIM OF STUDY** The aim of the study was to assess immunosuppressive therapy regimens in the context of *Pneumocystis jiroveci* pneumonia/colonization (PJPC) and infections caused by *Chlamydomyces pneumoniae*, *Legionella pneumophila* and *Mycoplasma pneumoniae* among lung transplant recipients during last 5 years of Lung Transplant Programme of SCCS./ **MATERIAL & METHODS** Study group consisted of 56 patients (26 women and 30 men; mean age 38.86 yr.) transplanted between 2012-2016 in SCCS. Patients were classified into three groups of immunosuppressive therapy: Tacrolimus, CSA and CSA with Sirolimus. The immunofluorescence method was used to detect the *P. jiroveci*, *L. pneumophila*, *C. pneumoniae* and *M. pneumoniae* antigens in samples obtained from respiratory tract./ **RESULTS** 18 out of 56 graft recipients developed atypical pneumonia. One patient on tacrolimus regimen developed atypical infection caused by *M. pneumoniae*. 41.38% of patients treated with CSA and 45.45% of patients on CSA with Sirolimus regimen developed atypical pneumonia. PJPC was 77.78% of all atypical infections, yet none of the patients treated with tacrolimus regimen was infected./ **CONCLUSIONS** The percentage of infected patients is higher in group of patients, who are treated with CSA regimen in comparison to Tacrolimus group. Results encourage further research on larger study group./

**Keywords:** Lung transplant, Immunosuppressive maintenance, Atypical infection

## **Relationship between metabolic acidosis, mortality and the decline of kidney function in patients long-term after kidney transplantation.**

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**INTRODUCTION:** Patients after kidney transplantation (KTP) suffer from different forms of chronic kidney disease (CKD). Available studies suggesting that metabolic acidosis (MA) contributes to the progression of KTP are only very limited.

**THE AIM:** The aim of this study was to examine the relationship between MA and both mortality and renal outcomes in KTP.

**MATERIAL AND METHODS:** 486 (290 male; 196 female) patients with mean age  $48 \pm 12$  at least one year after kidney transplantation (KTx) not treated with sodium bicarbonate or citrate salts were analyzed. Blood  $\text{HCO}_3^-$  were measured and then patients were observed during the next 5 years. The endpoints in survival curves analysis were death or initiation of dialysis therapy. In patients who did not reach the above endpoints the difference between final (after 5 years follow-up) and initial eGFR was calculated.

**RESULTS:** MA was diagnosed in 57 (12%) patients long term after KTx. In patients with MA the risks of death or initiation of dialysis therapy were significantly higher than in patients without MA [RR=2.74 (1.28-5.86),  $p=0.009$  and RR=3.10 (2.02-4.75),  $p<0.001$ ; respectively]. In KTP with MA who did not reach above mentioned endpoints, blood bicarbonate concentration at baseline correlated positively with changes of eGFR in 3 and 4 years of follow-up ( $R=0.48$ ,  $p=0.002$ ,  $n=36$ ,  $R=0.40$ ,  $p=0.02$ ,  $n=30$ ; respectively). There was no such correlations in patients without MA ( $n=386$ ).

**CONCLUSIONS:** 1. MA significantly increases mortality in KTP. 2. The higher intensity of MA is associated with much faster progression of kidney dysfunction which may influence graft survival in KTP.

**Keywords:** metabolic acidosis, kidney transplantation, chronic kidney disease

## **Does the First Post-transplant Year Exposure to Cyclosporine A Influence Blood Pressure Control and Kidney Graft Function? Preliminary study.**

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**Introduction:** Long-term exposure to high blood levels of cyclosporine A (CyA) is associated with chronic vascular toxicity and may shorten kidney graft survival. The aim of this study was to assess the effect of diverse exposure to CyA within a first post-transplant year on kidney graft function and blood pressure control in the distant follow-up observation.

**Methods:** This retrospective analysis included 33 kidney transplant recipients, constantly treated with CyA. First year CyA exposure was calculated on the basis of all consecutive drug measurements during first 12 months after transplantation. The effect of higher or lower exposure was analyzed in above and below median value subgroups, including glomerular filtration rate (GFR) and ambulatory blood pressure monitoring (ABPM) after a mean follow-up period of 9 years.

**Results:** The median exposure to CyA was 59 mg\*year/ml, with mean value of 53 (51-56) mg\*year/ml in below median subgroup and 72 (67-76) mg\*year/ml in above median subgroup. A current GFR values were 48 (36-60) ml/min/1.73m<sup>2</sup> in low exposure subgroup versus 48 (37-59) ml/min/1.73m<sup>2</sup> in high exposure subgroup (both NS). ABPM data showed higher systolic blood pressure values in higher exposure subgroup, both during day [152 (143-160) vs. 141 (133-149), p<0.05] and night [144 (132-156) vs. 130 (121-140), p<0.05]. There was no difference in the number of anti-hypertensive drugs in both analysed subgroups.

**Conclusion:** Our preliminary data suggest that a lower first post-transplant year exposure to cyclosporine is associated with better blood pressure control in a distant observation that cannot be explained by differences in kidney graft function.

**Keywords:** Cyclosporine, blood pressure control, kidney graf function,

## Cardiovascular risk factors in patients after liver transplantation

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**Introduction:** Liver transplantation (LTx) is the only treatment of late-stage liver cirrhosis. Cardiovascular diseases may influence the long-term survival of these patients.

**Aim:** Analyze the the prevalence of selected risk factors of cardiovascular diseases in patients after LTx (LTPs).

**Methods&Materials:** Study included 130 patients aged  $49.3 \pm 11.9$  years (52W, 78M) who were followed up for 2 yrs after LTx. The presence of hypertension, diabetes, chronic kidney disease, hypertriglyceridemia, overweight or obesity and hyperuricemia were analysed.

**Results:** 24 mths after LTx the mean serum uric acid concentration was  $383.8 \pm 102.3$   $\mu\text{mol/l}$  and hyperuricemia ( $\geq 450$   $\mu\text{mol/l}$ ) occurred in 24.3% patients. According to the WHO definitions 44% of patients were overweight, and 17.9% obese. Diabetes mellitus was presented in 34.6% of patients, hypertension in 70%, chronic kidney disease in 33.8% and hypertriglyceridemia in 38%. There was a significant correlation between the uricaemia and triglyceridaemia ( $R=0.42$ ,  $p<0.001$ ), eGFR ( $R=-0.45$ ,  $p<0.01$ ), BMI ( $R=0.48$ ,  $p<0.001$ ) and glycaemia ( $R=0.23$ ;  $p=0.01$ ). Patients with autoimmune liver disease are less likely to have hypertension), diabetes, hypertriglyceridaemia, obesity, and hyperuricaemia compared to those with alcoholic abuse background.

**Conclusions:** Cardiovascular risk factors are often observed in LTPs. Hyperuricaemia seems to play a leading role in cardiovascular complications in the LTPs as the significant correlation between serum uric acid and renal function, glycaemia and triglyceridaemia is present. The ethology of liver failure before LTx may influence on the prevalence of hyperuricaemia and other cardiovascular risk factors in LTPs.

**Keywords:** liver transplantation, cardiovascular disease, uric acid

## **The application of natural skin substitute - allogeneic skin graft for closing defects after excision of deep necrotic tissue.**

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Work's tutor: Dr n. med. Justyna Glik

**Introduction.** In the theoretical part of the work the advantages and disadvantages of allograft, methods of storage and indications for use were presented. In the research part of work the comparison of the efficacy of burn wound closure using autograft and allograft was shown in patients with burns in the Burn Treatment Center.

**The aim.** The evaluation of the effectiveness of the use of allograft and autologous skin in terms of length of hospitalization due to the applied kind of the natural skin substitute in two groups of patients.

**Materials and methods.** A retrospective analysis of medical records of 44 patients treated for burns in the Burn Treatment Center in Siemianowice Slaskie was performed. The patients were divided into two groups: the experimental - 22 patients treated with allogeneic skin graft and the control - 22 patients treated with autologous transplantation.

**Results.** The mean duration of hospitalization in two groups of patients were as follows: patients treated with autologous skin graft 22 days, whereas patients treated with allogeneic transplant 16 days. Research shows that the use of allograft reduced the time of patients hospitalization, but autologous skin showed higher effectiveness in closing burn wounds.

**Conclusions.** Autologous skin graft is the best method of closing the wound burn. The allograft shortens the duration of hospitalization in patients with burns IIB/III. The application of allogeneic skin appears to be an alternative solution, taking into account the lower traumatization.

**Keywords:** Allograft, autograft, burns.

**If the dosage of anti-thymocyte globulin (ATG) during induction therapy has an impact on the occurrence of selected atypical infections among lung transplant recipients of Silesian Center for Heart Diseases in Zabrze (SCCS) between 2014-2016.**

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**INTRODUCTION** The aim of immunosuppressive therapy after lung transplant is to achieve long-term survival of the recipient and graft. However, such treatment increases the risk of developing atypical pneumonia./ **THE AIM** The aim of the study was to assess ATG induction therapy in the context of Pneumocystis jiroveci pneumonia/colonization (PJPC) and infections caused by Chlamydomydia pneumoniae, Legionella pneumophila and Mycoplasma pneumoniae among lung transplant recipients during last 3 years of Lung Transplant Programme of SCCS./ **METHODS & MATERIALS** Study group consisted of 39 patients (18 women and 21 men; mean age 37.34 yr.) transplanted between 2014-2016 in SCCS. Thymoglobulin is the rabbit ATG agent administered during induction therapy based on CD3 positive T cells levels protocol. The immunofluorescence method was used to detect the P. jiroveci, L. pneumophila, C. pneumoniae and M. pneumoniae antigens in samples obtained from respiratory tract./ **RESULTS** 92.31% of patients were treated with ATG. Mean total dose was 820.95 mg. Mean time of administration was 9.24 days. 13 out of 39 graft recipients developed atypical pneumonia. PJPC was 84,62% of atypical infections. Among patients with atypical infection mean total dose of ATG was 984.62 mg. Mean time of administration was 10.31 days. The difference was not statistically significant ( $p > 0.05$ ). / **CONCLUSIONS** Mean total dose of ATG and mean time of administration were higher among patients, who developed atypical infection in comparison to group of patients without infection. Results encourage further investigation on larger group.

**Keywords:** Lung transplant, Atypical infections, Anti-thymocyte globulin

## **Results of transplantation of kidneys harvested from elderly deceased donors in medium-term follow-up period.**

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Introduction: Aging of population and permanent shortage of organs for transplantation result in increasing number of kidneys retrieved from elderly donors. However, transplantation of kidneys from elderly donors suffering from numerous comorbidities is related to fear of impaired renal graft function in postoperative period. The aim of the study was to analyse results of kidney transplantation (KTx) in recipients of kidneys harvested from donors over the age of 60 years in comparison to those who received kidneys from donors aged 40-59 years. Material and methods: 54 recipients of kidneys from donors aged over 60 years (group >60), and 236–40-59 years (group 40-59) who underwent KTx from 2004 to 2013 were enrolled into the study. Patient and kidney graft survival, as well as kidney graft function were analysed 1, 3, and 5 years after KTx. Results: 1, 3, and 5 years patient survival in group >60 was 85%, 82% and 82% compared to 95%, 92% and 90% in group 40-59. Kidney graft survival was 98%, 94% and 93% in group >60 and 95%, 91% and 87% in group 40-59 respectively. Conclusion: The survivals of patients who received kidneys from elderly donors is worse compared to recipients of kidneys from younger donors but still satisfying. The survival of the transplanted kidneys harvested from elderly and younger donors are similar.

**Keywords: transplantation, kidney**



INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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KATOWICE - POLAND



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

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## **The influence of lifestyle on skin condition of women after 50 years of age**

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Women's body is subject to many physiological changes during menopause. Skin aging is an inevitable and progressive process. Nowadays, promotion of healthy lifestyle is aimed at keeping our organism in good condition, including the skin.

The aim of the study was to determine the impact of quality of life on the skin condition in women after 50 years old.

Research was designed as an author's survey addressed to women after 50 years old. The survey is comprising 23 questions of single and multiple choice, which related to selected elements of the lifestyle: place of residence, amount of sleep, exposure to UV radiation, smoking cigarettes, healthy eating, activity and 6 selected functional parameters of the skin: color, occurrence of discoloration, moisture, vascular changes, structure, elasticity. The study covered 73 women. Analysis of the results was performed statistically using MS Office Excel.

In the studied population, smoking cigarettes showed the biggest influence on skin appearance. 88,2% smokers declare problem with discoloration and skin moisturizing, 58,8% change the color of the skin and 41,1% occurrence of wrinkles. No less important was the application UV filters, because up to 76,92% interviewers who not use them, showed vascular problems. However, there was no significant correlation between amount of sleep and analysis parameters of the skin.

The study showed, that statistical perspective pro-health habits and making the right choices every day, highly determined quality of the skin in women after 50 years old. Most adverse changes are caused by smoking.

**Keywords: women after 50 years of age , healthy lifestyle, parameters of the skin**

## **How well do you know your enemy? Knowledge of youth from Silesia about acne vulgaris**

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Acne vulgaris is very common disease in general population. It can cause a lot of difficulties in young people lives for example: self-perception disorder which can even lead to dysmorphophobia. Etiopathogenesis of acne vulgaris compose of wide range of causes like: hormonal changes, genetic predisposition and life style.

Analysis of knowledge concerning acne vulgaris as a disease and perception of affected population, etiopathogenesis and also in group of pupils learning in post primary schools.

Study was performed on 650 respondents (age: 13-19 years old) from Silesia region. Authorial survey consisted of 22 question was used.

1. About 60% of respondents struggled with acne like skin lesions in their lives. 2. 40% of pupils agreed with statement: 'Acne vulgaris occur only adolescents'. 3. 21 % of school-age-students uses sun bath as remedy for acne like skin condition. 4. 6% of educate claim that sexual intercourse can help with skin lesions regresion. 5. For most of respondents acne vulgaris is not a barrier in personal contacts. 6. Most of the students claim that their knowledge considering acne is 'good'.

1. Respondents have assimilate level of knowledge about acne vulgaris. Authors agreed that this level of knowledge is insufficient. 2. Stereotypes considering acne vulgaris are still present despite of generality of this disorder. 3. Studies indicate that access to information concerning both acne vulgaris and ways to treat it is insufficient.

**Keywords: acne vulgaris, dysmorphofoby, lifestyle, adolescents**

## Immune response of first-year medical students to a booster dose of Tdap vaccine

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Pertussis remains a major global health problem despite widespread vaccination programs. Accurate prevention in seronegative individuals is essential to limit its transmission.

The aim of the study was to assess the humoral immunity against pertussis achieved by booster Tdap vaccination in first year medical students.

The subjects were 24 medical students aged  $19,6 \pm 0,6$ , never before vaccinated with Tdap and negative for pertussis in anamnesis. All students were evaluated for the concentration of specific anti-pertussis toxoid antibodies (anti-PT) and then vaccinated with Tdap vaccine (Boostrix). After 6 weeks the level of antibodies was assessed again. The initial concentration of anti-PT 20 EU/l – protective (5-20 EU/l–grey zone). Positive response to the booster vaccination was defined as an increase in anti-PT to  $>20$  EU/l in those whose initial level was 20 EU/l.

14 (58,3%) patients were initially seronegative for anti-PT, 7 (29,2%) presented the IgG concentration 5-20 EU/l and in 3 (12,5%) it was  $>20$  EU/l. Immunologic response after vaccination was positive in 16 patients (66,7%) [median 50,8 EU/l; GMC=49,0 EU/l; av. increase of anti-PT-57,2 EU/l]. 8 students (33,3%) did not meet the criteria of positive response [median 13,1 EU/l, GMC=17,0; av. increase of anti-PT-21,1 EU/l].

A booster dose of the Tdap vaccine is safe and effective in young adults and should be recommended for medical students, as they may play an important role in B. pertussis transmission to high-risk patients.

**Keywords:** immune response, *Bordetella pertussis*, IgG, Boostrix vaccine, dTap vaccine

## **Comparison of the incidence of systemic disorders and BMI values in chronic skin diseases on the example of psoriasis and AD**

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Psoriasis is a chronic inflammatory skin disease, currently treated as a systemic condition. It is believed that this state corresponds to the long-lasting inflammatory process of the body. Atopic dermatitis is also a chronic inflammatory dermatosis, where clinical symptoms often precede the development of asthma and food allergies.

The aim of the study was to compare the incidence of systemic disorders in chronic skin diseases such as psoriasis and AD.

A retrospective study was conducted to analyze the history of 108 patients hospitalized in the Department of Dermatology in Katowice. The frequency of individual systemic disorders and patient's body parameters (height, weight) were analyzed. For each patient, the BMI has been calculated

Analysis of BMI showed that in psoriasis only in 17% of patients this value is in the normal range, while in patients with AD the normal values occur in over 50% of patients. In the studied group of patients with psoriasis average BMI was 29.47, whereas in AD 24.34, which gave a highly statistically significant relationship between the height of the BMI and the disease ( $p < 0.001$ ), hypertension was present in 45% of the patients with psoriasis and 16% with AD. Cardiovascular diseases affect 19% of patients with psoriasis and 7% of patients with AD.

Systemic disorders are more common in patients with psoriasis than with AD. Psoriasis proves to be the cause of development of these diseases. BMI values strongly correlate with dermatitis, reaching high above normal in psoriasis which confirms the relationship between obesity and psoriasis.

**Keywords: psoriasis, AD, atopic dermatitis, systemic disorders, BMI**

## Different methods of striae gravidarum prevention

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Striae gravidarum (SG) affects many women at different ages and it may be a serious aesthetic problem. SG are also known as stretch marks and are dermal lesions formed by excessive extension of a skin. Due to permanent character of the lesions, prevention plays a significant role. There are various cosmetics along with natural methods preventing stretch marks from forming or reduce their visibility.

To characterize the group of women using different type of prevention SG. To investigate and analyze their effectiveness and define the cause of different effects.

Author's questionnaire was carried out obtaining 518 answers. Average age in respondents was 25,2 years (95% CI: 24,8-25,7). 68% of women were actually pregnant (n = 352).

Cosmetics were used by 72,8% (n = 375) and natural methods by 23% (n = 121). Only 0,5 % of women suffered from allergy. Among cosmetics users: 44% avoided stretch marks forming, evaluation of skin elasticity (scale 0 – 3) was 1,78 (95% CI: 1,70 – 1,87) and average skin nourishment was 1,86 (95% CI: 1,77 -1,94). When cosmetics and natural methods were combined above indicators are: 100%, 1,94 (95% CI: 1,79 – 2,1) and 1,97 (95% CI: 1,83 – 2,11). Correlation between effectiveness of that methods and physical activity or simultaneous using of peeling was observed (p<0,05).

Despite the lack of statistical significance between average quality rating of the skin among cosmetics and both methods users, a better effectiveness can be achieved by combining natural methods and cosmetics. Whereas simultaneous using of peeling or regular physical activity may have positive impact on effectiveness.

**Keywords: striae gravidarum, prevention, cosmetics, natural methods**

## The influence of the plant-based diets on the common acne

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Common acne is a major aesthetic and therapeutic problem in young population. Typically, it affects individuals in their puberty. However, a constant increase in acne in 20 years old can be observed. The causes might be stress, sleep deprivation, accelerating pace of life and low quality diet. The question asked is "what should we eat?" The increasing popularity of plant-based diets drove our attention into this direction.

The purpose of this research project is to find if vegan and vegetarian diet influence condition of acne skin. Are this diets related to acne severity? Have they a chance in becoming an element in classic acne treatment? To answer these questions an Internet survey was conducted. It contained 42 questions concerning tendency to acne in family, lifestyle, dermatology treatment as well as diet and eating habits, which resulted with 213 responses from 23,7 years old on average.

The analyse revealed a statistical significance between vegetarian, vegan and standard diet and improvement of acne skin. The quality of diet ratio was 0,93 (95%CI: 0,81-1,0), 0,96 (95%CI: 0,83-1,10) i 0,66 (95%: 0,56-0,76;  $p < 0,05$ ). Both vegetarian and vegan diet improve the condition of acne skin, there was no relevant disparity in subjective improvement between them exposed 0,78 (95%CI:0,58-0,98) vs 0,95 (95%CI: 0,73-1,17).

The collected data revealed that vegan and vegetarian diet affect improvement in acne skin.

Moreover, a conscious choice of products and investigating the food labels may have significant influence as well. It may suggest that the diets or some of their features could become a complementary part of classical acne therapy.

**Keywords:** skin, common, acne, diet



## Is stigmatization a severe problem for people suffering from psoriasis?

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Patients suffering from a chronic, recurring disease like psoriasis, deal with the problem of social stigma. The feeling of stigmatization affects their emotional lives negatively, constricts everyday functioning and forces to hide their illness from the society. To enhance the quality of patients lives and to make their treatment more effective, we should realize the dependence between psychology and skin diseases.

The aim of our study is to answer the question whether people suffering from psoriasis feel stigmatized by the disease and to assess the level of stigma that they experience.

408 people (302 women and 106 men) with psoriasis completed our online survey which included the 6-item Stigmatization Scale by Lu et al. and the 33-item Feelings of Stigmatization Questionnaire by Ginsburg & Link. The results of our survey were developed using Statistica.

According to 33-item questionnaire the mean level of stigmatization was  $82 \pm 22,5$  points, and  $5,5 \pm 3,2$  points measured with 6-item scale. Statistically significant difference in stigmatization has been observed between women and men ( $p=0,011$ ). The mean levels of domains of stigma are anticipation of rejection 61,5%, feeling of being flawed 43,3% , sensitivity to the opinions of others 48%, guilt and shame 58%, secretiveness 32%, positive attitude 47,5%.

Our study presents that the level of stigmatization of women is statistically significantly higher than felt by men and it correlates negatively with women's age, education, place of residence and duration of their illness. Moreover, the location of skin changes affects the level of stigmatization felt by women.

**Keywords:** psoriasis, stigmatization, Ginsburg

## Evaluation of vision organ dysfunction in patients with psoriasis

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Psoriasis is a chronic, recurrent systemic disease. It is characterized by increased proliferation of the epidermis, the presence of follicular lesions covered with scales, resingning without scars remain. It affects about 2% of the population. The disease mainly affects the skin, joints, nail plates. Disorders of organ of vision are also observed.

Evaluation of vision organ dysfunction in patients with psoriasis.

Ophthalmic symptoms were gauged by questionnaire containing 36 questions. The study included 298 patients with psoriasis (204 women and 94 men). The mean age of the study group was 36.2 years. The survey compared study group with control group, which consisted of 186 healthy respondents.

The study showed that 49 % of patients with psoriasis report complaints from the eyes visual organ, and the most predisposing type is psoriatic arthritis. Women have a greater predisposition to the formation of eye changes than men. Duration of psoriasis has no influence on the occurrence of ocular lesions. The results of the study are preliminary, because further data are being collected.

The study found an association between psoriasis and the presence of ocular symptoms in patients. Treatment of psoriasis is not without an effect on the organ of vision, it requires close cooperation between dermatologists and ophthalmologists.

**Keywords: psoriasis, organ of vision, ocular symptoms**

## Who is awaiting interferon(IFN)-free therapy? Ten-year observation of 169 patients with chronic hepatitis C

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New therapies with directly acting antivirals (DAA) are effective and safe in contrast to the IFN-based ones. Long-term effect of antiviral IFN-based therapies on liver disease, as well as efficacy and side effects of DAA remains unknown. Many patients awaiting DAA therapy are treatment-experienced.

Study was aimed to investigate antiviral therapy history among HCV patients in a ten-year observational cohort after primary therapy failure.

398 HCV-chronically infected patients treated in 2003-2007 with pegylated IFN alfa and RBV (PR) in the Department of Infectious Diseases, Hepatology and Acquired Immune Deficiencies of Wrocław Medical University were included in the analysis. 169 patients with primary PR regimen failure were followed.

Genotype 1 HCV (134;79,29%) was the most common. Sustained viral response (SVR) rate of the prime therapy was 50,7%. In the ten-year observation period 59,17% patients were re-treated with an average of 2,53 therapies/patient. Out of the 153 retreatment regimens 104 (61,97%) were PR while 22 (14,38%) included PR with protease inhibitor with average therapies count  $1,83 \pm 0,65$ . Patients awaiting DAA therapy were  $51 \pm 7,23$  years of age with mean liver fibrosis  $3,5 \pm 0$  (72,22% cirrhotics),  $2,86 \pm 1,58$  concomitant diseases including  $1,5 \pm 0,85$  induced by PR therapy and taking  $1,19 \pm 1,94$  concomitant drugs.

IFN-based treatment experienced patients awaiting IFN-free therapy present with advanced liver fibrosis, concomitant diseases and with an increased risk of drug-drug interactions. Knowing patients awaiting DAA therapy better may be helpful in managing future safety and efficacy issues.

**Keywords:** hepatitis C, IFN-free therapy, DAA

## **Epidemiology and prevalence of ventilator-associated pneumonia. One year study in ICU of University Hospital in Wrocław**

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Ventilator-associated pneumonia (VAP) is an intubation-related infection diagnosed at the patients treated with invasive mechanical ventilation with duration for at least 48 hours. International Nosocomial Infection Control Consortium (INICC)/Centers for Disease Control and Prevention (CDC) created guidelines to prevent VAP called "VAP bundle".

VAP epidemiology evaluation in Intensive Care Unit (ICU) of University Hospital in Wrocław in comparison to INICC and National Healthcare Safety Network (NHSN) reports.

A prospective study was conducted in the 20 bed ICU of the University Hospital in Wrocław (01.01-31.12.2016). The frequency, etiology and prevention of VAP were estimated. The research presents density, incidence, DU-R (the use of mechanical ventilation) and microbiological profile of VAP.

Among 563 patients VAP was diagnosed in 56%. The incidence index was 13,15/100 admissions. Mechanical ventilation was used at 74% patients during 4251 patients-days and 3135 ventilation days. The density of VAP/1000 ventilation-days was 17,86. The main pathogen responsible for VAP was *Acinetobacter baumannii* (29/563). The density of VAP was 12,2/1000 and 0,9/1000 according to INICC and NHSN reports respectively. The most frequently isolated pathogen was *Acinetobacter baumannii* (INICC) and *Staphylococcus aureus* (NHSN).

The incidence of VAP in our study was higher than in the both international reports. The microbiological profile of VAP was similar to INICC report. High VAP density implies the need of uptaking further actions to improve the safety of the ICU patients.

**Keywords: VAP, ICU, microbiological profile, international infection reports**

## **Effect of Lomefloxacin on melanoma COLO829 cells viability**

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The incidence of malignant melanoma, the most aggressive skin cancer, is increasing constantly. Malignant melanoma is resistant to the conventional chemo- and radiotherapy. Despite new therapies, e.g. targeted- or immunotherapy, the prognosis for patients with metastatic disease remains poor. Thus, there is still a need to develop new strategies in melanoma therapy.

The aim of study was to examine the effect of lomefloxacin on melanoma COLO829 cells viability.

Cell viability was evaluated spectrophotometrically by the use of the WST-1 assay. Results: Lomefloxacin decreased the cell viability in a concentration (0- 1,0 mM) and time (0-72h) dependent manner reaching the maximum for the highest drug concentration (1,0 mM) and 72h incubation time (decrease in cell viability by about 90%).

The obtained results seem to be promising for the use of lomefloxacin as a potential therapy agent for the treatment of melanoma in vivo.

**Keywords: lomefloxacin, melanoma, skin cancer**

## **Characterization of toxin producing ability of *Clostridium perfringens* strains isolated from fecal samples of children with ASD - autism spectrum diseases**

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Autism is a neurologic disorder caused by a combination of genetic and environmental factors that are not yet fully understood. There is strong evidence that development of neuropsychiatric disorders may be associated with neurotoxins and metabolites produced by gut microbiota. One of suspected toxin-producing species is common Gram-positive anaerobe - *Clostridium perfringens*.

The aim of the study was to evaluate the prevalence of *C. perfringens* toxins (alpha, beta, beta2, epsilon, iota and enterotoxin) and their genes in strains isolated from stool specimens obtained from autistic children.

47 frozen strains of *C. perfringens* isolated from faecal samples of 29 patients aged 3,5-18 years (23 boys, 6 girls) diagnosed with autism spectrum disorders in GCZD, were studied. The strains were grown on Columbia blood agar in anaerobic conditions (Whitley A35 Anaerobic Workstation) at 37°C for 24 hours. Thereafter colonies were isolated in BHI broth for 24 hours. DNA was isolated using minicolumn purification method (DNA Gdańsk). Detection of toxin genes was carried out using multiplex PCR (Meer et al. 1997). Beta2 toxin was detected using primers proposed by Finegold et al. (2017).

Beta2 toxin produced 30 out of 47 studied strains (85,1%). Alphatoxin gene was detected in 35 (74,4%) of studied strains; 32 strains produced both alpha and beta2. The ability to produce other toxins was not detected amongst examined strains.

Our results confirmed presence of beta2 toxin gene in majority of studied *C. perfringens* strains. The role of toxin producing *C. perfringens* strains in pathomechanism of ASD requires further studies.

**Keywords: autism, gut microbiota, *Clostridium perfringens***

## **Hypersensitivity to contrast media used in diagnostic imaging – problem which appears more often in clinical practice or literature?**

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Hypersensitivity to contrast media used in diagnostic imaging is a medical problem which often appears in literature.

The aim of the study is to assess the prevalence of symptoms of hypersensitivity to contrast media used in radiology and magnetic resonance imaging(MRI).

A retrospective study was performed with authors' questionnaire aimed to institutions which perform diagnostic imaging. The research was conducted in Silesia and encompassed 19 places performing X-ray and 11 performing MRI examinations. The questions intended to determine the most commonly used contrast media, the frequency of hypersensitivity reactions and type of symptoms.

The most commonly used contrast media in radiology were: Iohexol and Iopromide. Immediate-type hypersensitivity reactions occurred with the frequency of 1: 10000 radiological procedures in 63% of centres. In 21% of institutions they appeared with the frequency of 1:1000. The most common symptoms were: urticaria(84%), nausea(84%), itch(63%).Delayed-type hypersensitivity reactions have ever appeared among patients in the 26% of centres. 21% of institutions have ever referred patients for hospitalization due to signs of hypersensitivity. The most common complications appeared after abdominal and pelvic CT(67%) and angiography(45%). In 36% of centres performing MRI with contrast media there was no sign of hypersensitivity. In others they occurred with the frequency of 1:10000.

Hypersensitivity to contrast media in diagnostic imaging is a rare clinical problem. Complications occur more often after a radiological than MRI examinations. In the majority of cases intensive therapy is not required.

**Keywords: contrast media, immediate- type hypersensitivity, diagnostic imaging**

## How much beauty salons costumers know about the solarium?

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Solarium is a tanning device emitting UV radiation. Unfortunately popular belief that the tanned skin looks healthily is still existing. However the truth is different, and frequent using the solarium is bringing a lot of adverse effects.

An assessment of the level of the knowledge of patients of beauty parlours was a purpose of the work about the solarium.

An author's questionnaire form directed at patients of beauty parlours located in Silesia constituted the research tool. The examined group consisted of 50 people (41 women and 9 men) in aged 24 to 51 years. There were some questions checking the knowledge of the subject in a questionnaire form among others: of transmitted radiating by lamps, possible adverse effects and fundamentals "safe" of using the solarium.

Among respondents 28% (14 persons) is using the service of tanning in the solarium. Almost a half (46%) of respondents don't know what kind of the UV radiation is being emitted by lamps. Majority, because as far as 78% of respondents claim their stated too necessary using protective goggles, though 18%, claim that it would be sufficient only to close their eyes. Nonetheless 82% of patients think that tanning in the solarium isn't safe and can cause: skin cancers, the precipitated ageing process of the skin, burns of skin and its illness.

Level of the knowledge of patients of beauty parlours about technical aspects of action of the solarium and fundamental "safe rules" of using it is rather low. However respondents realize dangers using this type of services.

**Keywords: solarium, tanned skin, UV**



## **A medical coach in the cosmetology and aesthetic medicine cabinet**

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A medical coach is a person whose task is to helping in the discovery, understanding and achieving life goals of the patients. The coach helps them in managing their health. In addition, the coach should be support for doctors and other healthcare professionals. This profession is very popular in Western Europe; it is also developing in Poland. In recent time, the conversation with the coach has become a very popular in professional body care cabinet.

The aim of the study was to analyze opinions of cosmetologists about their cooperation with the coach in cosmetology and cooperation cabinet.

The study was based on the authorial questionnaire consisting of 13 questions specifically connected with the medical coaching and competences of coach. The study group included 36 cosmetologists working in cabinets in Silesian region.

According to all cosmetologists, the image is very important in human life, and the effects of treatments for 75% also depend on suitable preparation. The concept of medical coaching is known for them, but they do not have the knowledge of coach's competence (47%). Therefore, the cooperative with the coach is unjustified for 53% of cosmetologists.

The medical coach is a specialist for both patients and employees. Knowledge of competence of the coach among cosmetologists about the competence of the coach is very poor, which may result from the low popularity of this profession in our country.

**Keywords: cosmetologist, cooperation, medical coaching**

## **Changes in serum tryptase level after psoralen and ultraviolet a therapy (PUVA) in the group of 17 patients suffering from mastocytosis**

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Mastocytosis is a pathological growth of mast cells in different organs. Serum tryptase level (STL) is one of diagnostic methods. Because of different outcomes about STL changes in different types of mastocytosis in available literature, we wanted to find out how STL changes after PUVA therapy in our group of patients.

The aim of the research was to find out if there are differences in STL in patients suffering from systemic mastocytosis (SM) and cutaneous mastocytosis (CM) after PUVA therapy.

A retrospective review of 17 patients (8 patients with SM and 9 patients with CM) was done. The research regarded: the STL before and after PUVA therapy, number of mast cells and PUVA exposures.

The research revealed a decrease of STL in 7 patients and an increase of STL in 10 patients after PUVA therapy. In the group of patients with SM an increase was noticed in 6 patients (3 women, 3 men) and a decrease in 2 patients (0 women, 2 men) whereas in patients presenting with CM an increase was observed in 4 patients (4 women, 0 men) and decrease in 5 patients (1 woman, 4 men). The median STL before PUVA therapy in SM was 43,85 in CM was 8,68. In women with SM with significant elevation of STL before PUVA therapy medium number of mast cells was higher. The limitation of research was small sample size, connected with rare occurrence of mastocytosis in population.

The decrease of STL was more common in CM than in SM. In patients with SM higher STL before PUVA therapy, an increased number of mast cells was observed. According to STL changes it might be possible to predict a type of mastocytosis and avoid more invasive diagnostic methods.

**Keywords: retrospective study, mastocytosis, PUVA therapy, serum tryptase level**

## Research of Polish society in the field of aware use of melanoma prevention

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According to the recent studies melanoma shows an increasing growth rate of cases in Poland and worldwide. Thus, the key solution becomes the appropriate use of prevention by people who are directly exposed to harmful UV rays.

The aim of this study is to assess the awareness of Polish society in the field of melanoma prevention. The respondents were asked about their natural behavior on UV radiation such as frequency and time spend on sunbathing, the use of sunscreens or the possibility of evaluation and observation skin marks at dermatologist, as well as on their own.

The research was held in Poland between 29th November 2016 and 10th January 2017 as the online survey. It was attended by 208 randomly selected respondents. The questionnaire comprised of 25 questions of melanoma prevention. The respondents answered among single and multiple choice questions. There was no extra information for the surveyed before answering.

1) Even 56% surveyed sunbathe between 12.00. pm and 3.00 pm. 2) 86% people use sunscreen before exposure to UV, whereas dominates medium level of protection (SPF 15 – 20). 3) 19% respondents use sunscreens on arising redness or burning. 4) Even 86% surveyed at least once got sunburn in their life. 5) Over than a half respondents (53%) have not ever heard about ABCDEs of melanoma.

The vast majority of Polish society, in truth applies sunscreens, but to a large extent people disregard the principles of their proper use. Moreover, it is still a rarity to check up pigmentary skin marks at specialist, as well as knowing the ABCDEs of melanoma.

**Keywords: prevention, melanoma, sunburn, sunscreen**

INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF DIETETICS AND NUTRITION**

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## **The mother's knowledge of breastfeeding's benefits connected with a length of breast-feeding.**

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Work's tutor: Elżbieta Szczepańska, Ph.D.

According to recommendations of e.g. World Health Organization breast feeding is the best way to feed babies - it allows to achieve optimal growth.

The aim of the study was to assess the knowledge of mothers about the benefits of breastfeeding based on the length of feeding.

The study included 233 women participated in the length of breast-feeding – 34,8% of them breast-fed less than 6 months, 28,3% - 6-12 months and 36,9% more than 12 months. The study tool was a questionnaire composed of questions about babies nutrition. The material were presented as MS Excel 2010 and in Statistica 12.0. For the analysis were used descriptive statistics, Gamma, V Cramer and Fi factors.

A significant part of women think that the breast-feeding is not a good method of contraception, such an answer was given by 84% mothers from group of the shortest length of breast-feeding, 90,9% of mothers breastfed between 6-12 months and 91,9% more than 12 months. In each analyzed group, women consider that breastfeeding is a good prophylaxis of allergy among children, such answer pointed out of 61,7% mothers breast-feed less than 6 months, 78,8% women of second group and 88,4% ones.

The women's knowledge is on the high level whereas mothers of babies breast-fed over 12 months characterized by the best one.

**Keywords: breast-feeding, knowledge, benefits**

## **Evaluation of the knowledge of protein and products rich in protein among football players of Tarnovia Tarnów football club**

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Protein has many important building and regenerative functions in our body. Takes part in normal growth, healing wounds and increasing muscle mass. For athletes apart from training and regeneration, a diet rich in protein of the highest quality is also important. Therefore knowledge about it should be a priority for athletes.

Evaluation of the knowledge of protein and products rich in proteins among football players Tarnovia Tarnów.

The research was conducted using an online questionnaire copyright. 59 footballers take part in the research. To evaluate the knowledge used 17 questions. Used four-point scales of knowledge in relation to the points earned converted into percentages : 26 - 50% average knowledge, 51 - 75% good knowledge, 76% - 100% knowledge very good.

Only 4 respondents scored less than 50%. The highest score was 14 points out of 17 possible. None of the respondents was in the group with unsatisfactory knowledge, 4 footballers (6.8%) have average knowledge. The largest group of respondents with good knowledge is 42 (71.2%). The rest of the footballers (23.7%) have a very good level of knowledge.

The level of knowledge about protein and products rich in proteins is satisfactory, but it should be slightly better. Athletes should have extensive knowledge of the protein that plays an important role in the exercise of professional physical activity.

**Keywords: protein, knowledge, football, footballers**

## **Study on the preferences of protein-rich products among Tarnovia Tarnów players**

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Protein in the human body plays a very important role. This is the basic organ donation and a significant component of enzymes, hormones or antibodies. Protein is important in normal growth and development of the human body, and is involved in the regeneration of lesions. Because important is choose products of the highest quality protein

An assessment of protein consumption preferences among football players Tarnovia Tarnów

The research was conducted using an online questionnaire copyright. 59 footballers take part in the research. Used six-point scale to evaluate preferences

Footballers are choose to reach for protein-rich products by choosing the ones that are appropriate and playing an important role in the diet of athletes. In evaluating the consumption preferences of 19 protein-rich products, most responded "very well" or "liked", in total reaching almost always more than 50% of responses. Very little, because about 5% answered "I do not like" or "very dislike". There was also a group of respondents with a high percentage of respondents who "did not like or like."

Footballers prefer to go for yogurt, cottage cheese and yellow cheese, eggs, chicken, Cured meats, fish and turkey. A large group does not eat venison, offal and pate. The biggest percentage of answers I like or like are gathered buttermilk, veal, pork, duck and pate.

**Keywords: protein, preferences, football players, soccer**



## **Knowledge and eating habits of primary school students on the example of Upper Silesia - preliminary report.**

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One of the most important factors affecting children's health is their diet. Improper nutrition can lead to developmental disorders and to the development of diet-related diseases.

To assess the knowledge and eating habits of primary school pupils living in Upper Silesia with regard to their gender.

Study of 52 girls and 79 boys aged 10-14. The research tool was a questionnaire consisting of a metric and 29 questions testing knowledge and food habits. The scale used was: very low 0-20%>, low 20-40%>, average 40-60%> and high 60% and more correct answers. The results obtained were developed using MS Office Excel 2013 and StatSoftStatistica 12.5.

The knowledge about the necessity of regular meals as well as breakfast consumption is 75.0% and 67.1% respectively, and 96.2% and 91.1% of the girls and boys respectively. Recommended 4-5 meals a day consumes 31% of girls and 39.20% of boys. On the other hand, daily consumption of I and II breakfasts confirmed respectively 61.50% and 72.10% and 53.80% and 63.20% respectively. The highest percentage of girls and boys is characterized by high levels of knowledge, respectively 73.1% and 51.3%, and average levels of dietary habits, respectively 28.8% and 24.4%, respectively.

The nutritional knowledge of tested students is sufficient, but eating habits are inappropriate. Girls have higher level of nutrition knowledge compared to boys, but there haven't been significant differences between the eating habits of these two groups.

**Keywords: nutritional knowledge, nutritional habits, students**

## **The role of the optimal diet in inducing whole body regeneration process after intensive chemotherapy in patient with Acute Myeloid Leukemia (AML).**

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Acute myeloid leukemia (AML) is a malignant cancer of the blood and bone marrow. Due to a lack of proper treatment the cancer leads to patient's death in a period of few weeks. The intensive chemotherapy is recommended but it also can escalate cancer-induced cachexia or cause potentially deadly side effects, such as infections or haemorrhages. Consequently, continuation of the chemotherapy in some patients can be life-threatening. Taking into account the biological status of patient, the complications occurring during the therapy and the fact, that the attainment of hematological complete remission (CR) does not always mean the recovery, the proper nutrition plays an essential role in patient's convalescence. The aim of the study is to present the role of the optimal diet during convalescence after chemotherapy in patients with cachexia and its significance on the subjective assessment of the patient's life comfort, patient's psychological, intellectual and physical efficiency. The influence of a diet on return of menstruation, as well as its immune-enhancing role and its impact on skin wounds and burns healing was also estimated. Case report of the patient diagnosed with AML was analysed on the basis on medical documentation, medical history of the patient and after consultation with the medical doctor who recommended to use the low-carbohydrate diet as an adjuvant therapy. The patient has followed the adjuvant therapy based on low-carbohydrate, high-fat diet enriched with high biological value proteins. **CONCLUSIONS** Using of low-carbohydrate diet can boost whole body regeneration and cause a reversal of cachexia. It gives a chance for successful recovery, long-term survival and patient's living in full health.

**Keywords:** AML - acute myeloid leukemia, cachexia, CR - complete remission, optimal diet, whole body regeneration

## **The use of dietary supplements among physically active students.**

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Dietary supplements used by physically active people result in enhancing muscle strength, energy reserves, regeneration and improving health.

The aim of the research was to analyse prevalence, type and motives of supplementation in the group of physically active students.

128 students of AWF in Katowice: 68 females (53,1%) and 60 males (46,9%), spending minimum 2h a week doing endurance and strength sports or team games took part in the study. Study was based on a questionnaire which included questions concerning type and aim of supplementation.

84,4% questioned regarded balanced diet as a basis of physically active people nutrition; only 7,0% students as a basis regarded well-matched supplementation. 52,4% of students declared use of dietary supplements, including 71,6% males and 35,3% females. The most frequently chosen supplements were: protein supplements (55,2%), magnesium supplements (49,3%), multivitamin and mineral supplements (40,3%), creatine (37,3%), isotonic drinks (32,8%), BCAA (31,3%), vitamin D (29,9%) and caffeine (26,9%). The questioned students used supplements in order to improve health (59,7%) and the increase of muscle mass (44,8%). 80,6% students estimated that supplements they use have a beneficial impact on the effectiveness of physical effort.

The use of dietary supplements in the questioned group was proven in over half of the students, majority of them were men. The majority of students pointed proper diet as the basis of nutrition for physically active people. Among supplements, those recommended for the increase of muscle mass and improving regeneration and health were prevailing.

**Keywords: supplementation, dietary supplements, sport, physical activity, students**

## **The frequency and preferences of consumption of fruits rich in vitamin C among students of Medical University of Silesia in Katowice**

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In human body vitamin C has many roles, the most prominent is being a powerful antioxidant. Vitamin C is required for the synthesis of collagen, can neutralize harmful free radicals and primarily is improving immunity through producing an immunoglobulins. Vitamin C is widely present in fruits and vegetables.

To assess the frequency and preferences of fruits consumption reach in vitamin C among ŚUM students.

Five- point scale internet questionnaire has been used to complete the research. 289 ŚUM students took part.

In frequency consumption research approximately 50% of answers were: occasional fruits consumption, except lemons, oranges, clementines and grapefruits. In research of preferences over 50% of answers were: like and like very much. Vast amount of answers were as well: neither like, neither dislike.

Despite of studying on medical specializations and incrised pro-health knowledge is been noticed too low consumption of fruits reach in vitamin C.

**Keywords: preferences, consumption frequency, fruits, vitamin C**

## What is more beneficial to health: regular or vegan diet?

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Recently, plant-based diet, which is an important element of veganism, became very trendy. Frequently, information about this kind of diet is taken from cooking blogs popular on the Internet.

Evaluation and comparison of vegan and regular dishes promoted on Polish cooking blogs.

Data was collected from Polish vegan blogs and blogs promoting regular diet. In total, 30 vegan and 30 regular midday meals were analysed. Based on recipes posted on the blogs, caloric and nutritional values were calculated (Diet 5) and the average content of nutrients in vegan and regular counterparts was estimated. Comparison of food composition was made per 100 grams.

Average caloric value of 100g portion of analysed vegan dish amounted to  $\pm 140,5$  kcal, and regular to  $\pm 144,5$  kcal. Average amount of protein in vegan diet is  $\pm 5,5$ g, and in regular diet is  $\pm 8,7$ g. Average fat content in vegan diet amounted to  $\pm 4,7$ g, and in regular diet  $\pm 7$ g. A hundred gram serving of vegan dish contained an average of  $\pm 21,2$ g of carbohydrates,  $\pm 3,7$ g of fibre,  $\pm 1,4$ mg of iron,  $\pm 36,6$ mg of calcium and  $\pm 0$  $\mu$ g of vitamin D. Correspondingly, regular dishes contained:  $\pm 12,5$ g of carbohydrates,  $\pm 1,4$ g of fibre,  $\pm 1$ mg of iron,  $\pm 28,8$ mg of calcium and  $\pm 0,9$  $\mu$ g of vitamin D.

Vegan dishes largely consisted of fruit and vegetables, which made them a rich source of fibre. In turn, their regular diet counterparts contain more protein and fat, which results from animal products. Vegan meals were characterised by lower level of vitamin D and B12 than their counterparts in regular diet.

**Keywords: veganism, bloggers, menu**

## **Evaluating the nutritional status of patients suffering from cystic fibrosis that are receiving treatment in The Institute of Tuberculosis and Lung Diseases in Rabka-Zdrój.**

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Normal nutritional status is very important for patients with cystic fibrosis as it plays a major role in treatment. A balanced diet slows down the progression of the disease.

The aim of my work was to assess the nutritional status of patients suffering from Cystic Fibrosis that are receiving treatment in The Institute of Tuberculosis and Lung Diseases in Rabka-Zdrój.

The study was conducted among the patients suffering from cystic fibrosis that are receiving treatment in The Institute of Tuberculosis and Lung Diseases in Rabka-Zdrój between 27.02–5.03.2017, 8 patients participated. Authorial questionnaire and a special device, analyser–Tanita BC 1000 were used for the purpose of this study.

The WHR was increased in some subjects, it may suggest enlargement of the liver which is a common problem for people suffering from cystic fibrosis. The body fat percentage analysis showed that, in majority, the patients suffered either from underfeeding or emaciation. 75% of the subjects follow the energy feeding regime, moreover every examined patient takes a dietary supplement “Nutridrink”. One of the subjects was fed through a feeding tube during the study. Vast majority of the patients use vitamin A,D,E,K supplements. Every subject consumes 4–5 meals per per day. It was found out that the vegetable consumption in the diet is too low. A large majority the respondents rated their health status and overall dietary patterns as good.

1. In most subjects the body fat percentage was too low. 2. The half of patients have a lower skeletal mass in comparison with the norm 3. All respondents take the dietary supplement "Nutridrink"

**Keywords: Cystic Fibrosis, undernutrition, nutritional status**

## Is natural honey a nectar full of divine antioxidants?

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In the recent years scientists have been concerned on the antioxidants due to the fact that their deficiency plays major role in the pathogenesis of most civilization disorders such as diabetes or arteriosclerosis. At the same time people who want to stay healthy are searching for the latest news about the most nutritious and preventing from diseases food. For ages natural honey was considered to be a divine nectar – a remedy for many health problems. Although the general beneficial effect is well-known, we still don't know which type of honey is the richest in antioxidants.

Comparison of the antioxidant status of honeys which are available on the Polish market.

To access the antioxidant status of honeys, 3 spectrophotometric methods were applied: FRAP consisting of determination of the reducing Fe<sup>3+</sup>-ability, DPPH method consisting of the reduction of DPPH radical by antioxidants contained in honey and the Folin-Ciocalteu reaction (FCR) for total polyphenols content determination. Water solutions of 16 honeys were analyzed. The results were expressed as trolox (T)[ $\mu\text{mol T/g honey}$ ] or gallic acid (GA) equivalent [mg GA/g honey]. RESULTS The antioxidant status of the honeys were in the range of 0,2-3,4 [ $\mu\text{mol T/g}$ ] for FRAP; 0,2-1,3 [ $\mu\text{mol T/g}$ ] for DPPH method and 0,2-1,4 [mg GA/g] for FCR. The best antioxidant properties showed the bee bread honey and the lowest – the acacia honey.

Natural honey is a reach source of antioxidants. Especially the Polish dark honeys: bee bread, honeydew and buckwheat have good antioxidant properties.

**Keywords: honey, antioxidants, nutrition**

## **Evaluation of the impact of students' diet on the results obtained in the course of study.**

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Nutrition plays an important role in the life of every human being. Properly balanced diet prevents diseases, affects the maintenance of acid-base balance of the body and cognitive and intellectual abilities of young people.

The aim of this study is to evaluate the effect of dietary habits on the school results.

The study was conducted using a proprietary online survey consisting of 24 questions, which included questions open and closed. The test was performed on a group of more than 500 students from across the Poland. Students participating in the survey were diverse in terms of age, universities and fields of study.

The results show that there is a positive correlation between diet and student learning outcomes.

Application of the principles of proper nutrition may be an important factor in the effectiveness of the learning process, achieving high academic performance and facilitating the acquisition of knowledge.

**Keywords: Diet, Nutrition, Exams, Students**



## **Acyl-CoA type 5 gene polymorphism and inappropriate body mass occurrence related to waist circumference and insulin resistance index among the population living in southern Poland**

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Metabolic disturbances of lipids and obesity connected with them are problems which occur more and more often in highly-developer countries. Acyl-CoA synthetase (ACSL). Proper functioning of this enzyme provides the substrates both for lipogenesis and  $\beta$ -oxidation of fatty acids. This makes a determination of a correlation between polymorphism of a gene for ACLS and obesity development a relevant research issue.

The aim of this study was to examine the dependence of polymorphism of gene for Acyl-CoA synthetase on inappropriate body weight occurrence and HOMA-IR indicator values.

To reach this objective a polymorphism of ACLS gene within a research sample of 506 patients living in southern Poland was determined. Conducting Real Time PCR reaction in order to amplify a selected gene fragment, respectively amplified a selected fragment of gene, molecular research using fluorescent techniques were performed. There were 506 examined patients in total, whose polymorphism of ACSL5 rs2419621 was determined using probes binding with specific DNA matrix.

Among the patients from the research sample 176 patients with a proper body weight were identified along with 330 patients with inappropriate Body Mass Index values.

It has been determined using  $\chi^2$  test that there are no differences between statistical variables in distribution of genotypes for polymorphism of gene for synthetase of acyl-CoA of isoform 5. It has been also determined using the statistical test of Hardy-Weinberg that genotype proportions within population are maintained.

**Keywords: obesity, fatty acids, acyl CoA synthetase**

## **Interaction between selected components of dietary supplements and polyphenols included in infusions of Robusta coffee.**

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Popularity of coffee is connected with its taste, stimulating and pro-health qualities. Coffee is a rich source of compounds such as alkaloids, minerals, vitamins, antioxidants, among those the most important group are polyphenols. Antioxidants are radical scavengers, so they have ability to decrease the risk of neurodegenerative disorders, heart diseases, diabetes or cancer. Active compounds concentration in the coffee brews changes due to production method, preparing conditions and addition of other substances.

The aim of the study was to evaluate the interaction between selected components of dietary supplements and polyphenols from various Robusta coffee's brews.

Different Robusta coffee brews, obtained from roasted beans at 245 °C for 15 and 23 minutes, were prepared. Have been analyzed solutions of resveratrol, chlorogenic acid, coffee infusions: with and without addition of resveratrol or chlorogenic acid. To determine the polyphenol concentration, Fast Blue method was used while evaluation of antioxidant status was conducted using ABTS method.

The infusions of coffee, which beans were burned longer, had an increased concentration of polyphenols and higher value of total antioxidant capacity compared to coffee brew roasted shorter. The addition of chlorogenic acid or resveratrol caused an increase concentration of polyphenols and the value of the total antioxidant capacity in the tested coffee brew with regard to the expected value.

The addition of antioxidants to coffee brew results in the interaction of a synergistic effect.

**Keywords: Robusta coffee, resveratrol, chlorogenic acid**

## **Sweet & salty chocolate cake with caramelized bacon – respondents taste sensations.**

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Food pairing is an art of connecting seemingly misguided ingredients. Hypothesis of flavour pairing assumes that dish rich in ingredients, that have similar aromatic compounds is more tasty than dish from ingredients with different compounds. One of exemplary collations according to this concept is fusion between meat and caramel or chocolate.

The study aimed at researching how group of answerers will respond to unusual flavour pairings and what they mostly pay attention to.

Material to the study was sweet & salty chocolate cake with carmelized bacon made by students of Studenckie Koło Naukowe przy Zakładzie Technologii i Oceny Jakości Żywności Katedry Dietetyki, from School of Public Health in Bytom, Medical University of Silesia in Katowice Cake was portioned out and put under degustation to group of 30 Dietetics students of Medical University of Silesia in Katowice, which had required training in sensory and organoleptic analysis. Group had a task to express their opinions about cream, dough and whole baking.

77% of respondents expressed their positive opinions about the whole baking. One third of the group finds mixture of sweet and salty flavour beneficial and thereby state that chocolate flavour fits with the taste of caramelized bacon. Equal amounts of respondents declare to pay attention to taste and texture when it comes to dough, but for cream more respondents (60%) pay attention to its taste.

Only part of tested group is ready to introduct avant-garde flavour pairings. Majority of respondents pay their attention to taste rather than texture of the dish.

**Keywords: foodpairing, new technologies in gastronomy, trends in gastronomy**

## **Changing feeding habits among modern families.**

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Each young person has got his own feeding habits and they depend on conditions and times when he lives. Many feeding habits we have from our families and we continue them during our life because they are healthy, attractive and fashionable for us.

The main aim of this work is comparison feeding habits of first year student nurse, IT, psycho-criminalistics and their families.

It was made by a sample survey diagnostic and research tool and it was author's questionnaire. The author's questionnaire had got 22 questions. This survey lasted since November 2016 to January 2017. 95 SUM, UŚ, SWPS students and their 55 members of families were questioned about their habits of feeding.

Habits of feeding: 14,7% (14 students) and 29% (16 family members) eat 5 times a day. 71,6% (69 students) and 76,8% (43 family members) eat sandwiches for supper. 80% (76 students) and 35,7 (20 family members) have meetings with family/ friends in the restaurant.

Students continue tradition and habits of feeding which they have got in their families. Both students and their families have got an average level of consciousness about healthy diet. Students commit the same mistakes about healthy diet like their parents and grandparents. Student nurses have got more information about healthy feeding and healthy diet but they don't put their knowledge into practice.

**Keywords: Feeding habits, diet**

## **Preferences and frequency of consumption of products such as fast food, instant and fizzy drinks.**

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Consumption of instant products and fast food can promote the occurrence of chronic diseases, as well as involve the growing epidemic of overweight and obesity. The high availability of such products, their commonness and relatively low price are the factors encouraging young people to buy them.

The aim of the study was to determine preferences and frequency of fast food intake, instant and fizzy drinks by the students of dietetics of Medical University of Silesia and the Silesian University of Technology students, as well as the comparison of both groups.

The study was conducted using an original on-line questionnaire. The study included a sample of 126 people, 71 of them are students of dietetics of Medical University of Silesia, and the remaining 55 respondents study at the Silesian University of Technology. Microsoft Excel was used for analyzing results.

The students of Silesian University of Technology consume fast food, instant products and soft drinks more often than students of dietetics of Medical University of Silesia in Katowice. A greater number of dietetics students, compared to the students of the Silesian Technical University, declares that they do not eat certain products of which they were asked in the research. Silesian University of Technology students more often eat meals out than dietetic students.

Food preferences and frequency of consumption of instant products, fast food and soft drinks are different between examined groups. It can be concluded that this is dependent on the level of nutritional knowledge of the respondents.

**Keywords: fast food, instant products, preferences, frequency, fizzy drinks**

## **Knowledge about lactose intolerance among people over 50 years old.**

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Among an increasing number of people, the decline of the lactase's activity occurs with age. The enzyme is responsible for digesting lactose. It leads to the gastrointestinal disorders which take place after milk and/or dairy products consumption. As a result, people with lactose intolerance use an elimination diet. Yet, the lack of knowledge about lactose intolerance may result in the shortages of important dietary components e.g. calcium.

Evaluation of knowledge about lactose intolerance among people over 50 years old.

The study was conducted with an authorial questionnaire. The surveyed group consists of 103 respondents who attend the University of the Third Age in Ruda Śląska. The questionnaire contains 22 closed-ended questions and 2 open-ended questions.

88% of respondents claim that they haven't lactose intolerance, whereas 50,54% of them feel discomfort after consuming milk and/or dairy products. Despite the fact that the majority 63% is acquainted with the term lactose intolerance and lactose, they don't know which dairy products are tolerated. 12.6% of respondents correctly identified the sources of calcium. Most of them learn about lactose intolerance from the Internet -41.67% of respondents with identified lactose intolerance and 12.6% of them who don't suffer from lactose intolerance.

A large percentage of people who are 50 years old feel discomfort after consuming milk and/or dairy products regardless of having lactose intolerance identified or not. The respondents don't know how to substitute milk and dairy products, or how they should supplement the calcium deficit while using the elimination diet.

**Keywords: lactose intolerance , gastrointestinal disorders, people over 50 years old**

## **Evaluation of the quality of raw milk compared to the milk available on the market fixed by the selected thermal processes**

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Milk is a valuable source of nutrients in the human diet. Raw milk is a natural product obtained through the milking process of healthy cows. Increasing consumption of milk in Poland and endeavor of manufacturers to maximally prolong the durability of the product motivates the search for new methods of fixing it.

The aim of this work was to evaluate the sensory quality of raw milk and the commercially available milk pasteurized and UHT milk and milk powder.

The study included raw milk collected on a farm in the city of Katowice and samples of pasteurized, UHT and powdered milk available on the market with 2% fat content. Samples were subjected to a sensory analysis, during which the taste, smell and color of the products were evaluated using the 5-point method. Using the scheduling method, the overall appearance of the samples was assessed.

The evaluators mostly evaluated pasteurized milk. Milk pasteurized and UHT milk got the same amount of points in terms of taste. Color and smell of raw milk were low rating. The highest overall rating was achieved by UHT milk, while the lowest was milk powder.

The quality of dairy products largely depends on the type of thermal treatment. Sensory values of milk affect consumer preferences.

**Keywords: raw milk, UHT, sensory quality, pasteurization**

## **Analysis of nutrition of infants due to age**

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Specialist of WHO are recommending breast-feeding as the base of nutrition and gradual leading of solids between 17 and 26 week of the life.

The aim of the study was evaluation of dietary practices of babies below and above 6 of month of living with reference to applicable standards.

The study included 147 women, amongst which 55,1% was mothers which infants didn't finish 6 months, however 44,7% examined which the age of the child was above 6 of month. The study tool was a questionnaire composed of questions about babies nutrition. The material were presented as MS Excel 2010 and in Statistica 12.0. For the analysis were used descriptive statistics, Gamma, V Cramer and Fi factors.

Majority examined having infants below 6 month of the life declared feeding on exclusively a breast, it was appropriately 85,1%. As far as 42,4% of women declared that they had entered gluten into child diet between 17 and 26 week of the life, the result concerned infants above 6 of month. The highest percentage examined emphasized the extension of the diet by implementing vegetables what constituted 85,7% amongst women having children below 6 of month.

Majority of babies above and below 6 of month of the life was fed according to the correct outline of nutrition, also being overcome new guidelines concerning entered gluten into child diet along with solids.

**Keywords: nutrition, infants**



INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF PHARMACY AND CLINICAL PHARMACOLOGY**

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## **Analysis of the frequency of dispensing PPI in combination with NSAIDs in a community pharmacy**

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Recently, in the medical literature numerous reports have been published on the combined use of proton-pump inhibitors (PPI) and non-steroidal anti-inflammatory drugs (NSAIDs). According to these reports many patients with a high risk of complications from the gastrointestinal tract have been required to prophylactically use PPI, for a long time during their medically necessary treatment with NSAIDs. However, the practice of routine combining of the PPI and NSAIDs especially during short-term treatment with NSAIDs can cause potential PPI overuse.

An assessment of the frequency and medical indications of combined prescribing PPI and NSAIDs in a community pharmacy.

A review of current medical literature on the combined use of PPI with NSAIDs and an analysis of the documentation and the sales report of dispensed PPI and NSAIDs during the study period from the community pharmacy.

In the analyzed time period 1.07-31.12.2016, 72 prescriptions containing PPI and NSAIDs out of the 3093 prescriptions containing either NSAIDs or PPI were dispensed from the local pharmacy. Due to a possible acquisition of NSAIDs and PPI without prescription, there is a risk of their concomitant use without the knowledge or recommendations of a doctor or a pharmacist.

The use of PPI should be reduced in a short-term therapy with NSAIDs and in patients who are not in the high risk group for complications from the gastrointestinal tract. Dispensing PPI and NSAIDs requires conducting an interview to exclude potential complications related to possible interactions with the prescription or OTC medications and dietary supplements acquired outside of the pharmacy.

**Keywords: PPI, NSAIDs, proton-pump inhibitors, non-steroidal anti-inflammatory drugs**

## Development of release profile of IDA from biodegradable wafers

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Idarubicin (IDA) is routinely applied in the treatment for various types of leukemia or metastatic breast cancer. Moreover, gliomas cells reveal sensitivity to IDA, which point to the possibility of glioblastoma multiforme (GBM) treatment. Blood brain barrier and side effects of intravenous and oral administration limit the application of IDA in glioma therapy.

Biodegradable, implantable wafers with IDA locally administrated may dissolve therapeutics problems of GBM.

The wafers with IDA (5% w/w and 10% w/w) were formulated by solution casting from poly(L-lactide-co-glycolide) (L-PLGA) and poly( $\epsilon$ -caprolactone-co-glycolide). Degradation of wafers were performed in artificial cerebrospinal fluid (37°C, 240 rpm). The concentration of released IDA was estimated by UV-VIS spectroscopy method (485nm). The wafers features were studied by AFM and FTIR. IDA was released from wafers by maximum period of during 587 days. Two stages of IDA release ensure bolus dose with maintenance dose. The greatest intensity of release ratio in the first stage was achieved for L-PLGA wafer with 5% content of IDA.

The surface of this wafer was relatively the most flat and the least differentiated morphologically. The lack of IDA-polymer material interactions may provide the bolus dose. Proposed IDA wafers may be interesting solution in the therapy of GBM.

**Keywords:** idarubicin, wafer, glioblastoma multiforme

## The influence of $\gamma$ -irradiation sterilization method on the properties of risperidone-loaded polymer rods

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Schizophrenia is a disease entity, which requires permanent administration of drug substances. Optimization of the treatment process is possible through the use of biocompatible and implantable solid formulation based on polymer rods with risperidone (RSP). This solution would allow to eliminate the most common therapeutic problems, i.e. noncompliance and dysphagia. Sterilization is significant unit operation for implantable drug delivery systems.  $\gamma$ -irradiation with a dose of 25 kGy is routinely applied for this purpose. This sterilization method may influence the number of parameters responsible for quality of the final medicinal product.

The subject of this study was influence of the  $\gamma$ -irradiation on structural, surface and thermal properties of the polymer rods made by L-lactide-co-glycolide-co-trimethylenecarbonate (P(L-LA:GA:TMC)).

Polymer P(L-LA:GA:TMC) (57:19:24) (59000 Da) was synthesized in mass with the use of zirconium (IV) acetylacetonate as a low-toxic initiator. Blind rods and rods with RSP (10% w/w) were obtained by extrusion method. Sterilization was performed by  $\gamma$ -irradiation using an electron beam accelerator (10 MeV, 360 mA, 25 kGy). NMR, GPC, DSC and SEM methods were used to evaluate the properties of the polymeric rods.

Studies revealed significant decrease in molecular weight of both kind of rods as a consequence of the extrusion, while other parameters revealed non meaningful changes.

However, the sterilization process did not significantly influence the properties of the blind rods and rods with RSP.  $\gamma$ -irradiation is adequate sterilization method of RSP-loaded P(L-LA:GA:TMC) rods.

**Keywords:**  $\gamma$ -irradiation, poly(L-lactide-co-glycolide-co-trimethylenecarbonate), polymer rods, risperidone

## The impact of minocycline on viability melanocytes HEMn-DP

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Minocycline is a semisynthetic antibiotic with a broad-spectrum of antibacterial activity as well as anti-inflammatory and neuroprotective. Compared with first-generation tetracyclines, minocycline has a better pharmacokinetic profile and is less phototoxic, but caused melanodermas like other tetracyclines. Melanocytes are cells, that produce melanins. Melanin is a biopolymeric pigment (dye function) that is located mainly in the skin, hair, eye and ear. It also has photoprotective function. The ability of bindings drugs, e.g. tetracycline antibiotics - important feature of melanin.

The aim of the work was to determine the impact of minocycline on melanocytes viability exposed to UVA and UVB radiation.

Normal human melanocytes HEMn-DP (Cascades Biologics) and solutions of minocycline's with different concentrations were used. They were radiated using with BVL-8.LM (Vilber Lourmat) UV lamp. Measurement of viability of melanocytes was performed with WST-1 test due to the producer protocol.

The obtained results have shown that reaction of melanocytes on UVA and UVB radiation are different. Melanocytes viability in presence of minocycline depends on antibiotic concentration and radiation that were exposed to.

The obtained results may lead to the conclusion that melanocytes and melanin may play a vital role in phototoxicity of tetracycline antibiotics.

**Keywords: melanocytes, minocycline, phototoxicity, melanodermas**

## **The effect of carvedilol alone and in synergy with sorafenib on growth of amelanotic and melanotic melanoma cells**

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Carvedilol is a nonselective  $\beta$ -blocker used for the treatment of congestive heart failure and hypertension. Recent studies showed that long-term treatment with carvedilol could be also associated with reduced cancer risk. Therefore, it seems to be interesting to find out whether carvedilol may potentiate the activity of anticancer drugs. Sorafenib is multikinase inhibitor targeting Raf-1 and B-Raf serine/threonine kinases as well as different receptor tyrosine kinases. The effect of the combination of carvedilol and sorafenib on the growth of melanoma cells in vitro has not been investigated as yet.

The aim of the study was to evaluate the influence of carvedilol and sorafenib on growth of melanotic and amelanotic melanoma cells in vitro.

The A2058 and C32 cells used as a model of skin melanoma were exposed to different concentrations of carvedilol (0.1-25  $\mu\text{M}$ ) and sorafenib (0.1-10  $\mu\text{M}$ ) alone and in combination for 72 hours. To evaluate cell growth a Sulforhodamine B assay was conducted.

The present study showed that carvedilol and sorafenib caused dose-dependent growth inhibition of both studied cell lines. Moreover, when cells were co-treated with both drugs together the inhibition of their growth was more pronounced than when the drugs were used separately.

The results of this study demonstrated the growth inhibitory properties of carvedilol and sorafenib on melanoma cells. These data revealed for the first time the synergistic, antiproliferative effect of carvedilol and sorafenib on melanoma cells in vitro. Hence, it can be suggested that simultaneous treatment with these drugs could allow lowering the dose of cytotoxic agents and lead to less toxic therapy.

**Keywords: carvedilol, sorafenib, melanoma, proliferation**

## Anticancer potential of new xanthone derivatives in colon cancer cells

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Colorectal cancer is the most common malignant neoplasm in Europe with high mortality rate. To improve chemotherapy of colorectal cancer, many natural substances were investigated, such as xanthenes, which are compounds of wide pharmacological activity, including anticancer properties. The most active natural xanthenes are  $\alpha$ -mangostin and gambogic acid isolated from plants of Clusiaceae family.

The aim of the study was to estimate the influence of xanthone derivatives on the colon cancer cells.

The experiments were carried out on Caco2 and HT-29 cell lines. Two natural xanthone derivatives:  $\alpha$ -mangostin and gambogic acid and four synthetic derivatives (compound 1 to 4) synthesized at the Dept. of Bioorganic Chemistry of the Jagiellonian University were estimated. Cisplatin and 5-fluorouracil were used as reference compounds. To determine IC50 values and evaluate cytotoxic effect of xanthenes MTS test and LDH release test were used. Changes of cell proliferation was evaluated by microscopic test Click-iT EdU. Additionally, BAX, BCL-2 and H3 expression was analyzed using Real-Time<sup>TM</sup> RT-PCR.

In HT-29 cell line IC50 values of  $\alpha$ -mangostin (7,1  $\mu$ M) and gambogic acid (10,5  $\mu$ M) were lower than the reference compounds (11,2  $\mu$ M – 11,5  $\mu$ M).

The study has demonstrated a negative correlation between the results obtained using the MTS and LDH ( $r=0,798$ ). The results of Click-iT EdU test proved that cell proliferation decreased both in cultures treated with natural xanthenes (83,5% - 94,9%), and the reference compounds (88,3% - 91,8%). Molecular analysis confirmed decrease in the expression of BCL-2 and H3 genes and increase in the expression of BAX.

**Keywords: colorectal cancer, xanthone derivatives, anticancer potential**



## **Impact of streptomycin on the level of reactive oxygen species in melanocytes HEMn-DP**

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Aminoglycosides are broad spectrum antibiotics, used mainly in the treatment of life-threatening infections. Streptomycin was the first discovered aminoglycoside. It demonstrates bactericidal effects against *Mycobacterium tuberculosis* and many other bacteria resistant to penicillin. Aminoglycoside antibiotics treatment is associated with a high risk of ototoxicity. It is postulated, that their ototoxic effect of this drug can be caused by imbalance between production and neutralization of reactive oxygen species.

The aim of the study was to examine the impact of streptomycin on the level of reactive oxygen species in melanocytes.

Normal human melanocytes HEMn-DP were used. The intracellular level of reactive oxygen species was determined by fluorescence using a reagent DCFDA. Analysis of the level of cellular thiols was performed using the system NucleoCounter NC-3000.

The obtained results have shown that streptomycin modulates the level of reactive oxygen species in melanocytes.

The obtained results in vitro may explain the potential participation of melanocytes in the mechanism of formation ototoxicity in vivo during the aminoglycosides therapy.

**Keywords: streptomycin, reactive oxygen species, melanocytes**

## The impact of Pterostilbene on the growth of various cancer cells

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Pterostilbene is a naturally derived compound found primarily in blueberries and grapes. It has been found to possess several pharmacological activities such as antioxidative, anti-inflammatory and antiproliferative. Recent studies showed that pterostilbene may have preventive and therapeutic properties in a wide range of human diseases including cardiovascular and metabolic disorders, as well as cancer. Pterostilbene exhibits its biological effects via various molecular mechanisms such as modulation of gene expression, signal transduction pathways and enzyme activity. However, the molecular mechanisms underlying the effects of pterostilbene against various types of cancer remain largely unknown.

The aim of this study was to investigate the effect of pterostilbene on growth of human cell lines derived from colon cancer, breast cancer, ovarian cancer and malignant melanoma.

Cells were exposed to different concentrations of pterostilbene (2,5-60 mM) for 72 hours. Cell growth was determined by sulforhodamine B assay and expressed as a percentage of that of untreated control cells. The concentration of pterostilbene required for 50% inhibition of cell growth (IC<sub>50</sub>) was calculated from log dose-response curves.

The results of this study showed that pterostilbene caused dose-dependent growth suppression of cancer cells. The most significant growth inhibition was observed in cultures incubated with the highest concentration of pterostilbene. Moreover, various cell lines presented different sensitivity to the antiproliferative influence of pterostilbene.

The findings of the study revealed antiproliferative activity of pterostilbene have against various cancer cells in vitro.

**Keywords: pterostilbene, cancer cells, proliferation**

## **Hypotensive drugs affect macrophage ability to induce antibody production in mice**

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Current studies focusing on hypertension suggest the important role of inflammation in complex pathogenesis of cardiovascular disease. Additional effect of hypotensive drugs on immunity could be beneficial for therapy. Recently, our studies demonstrated the affection of mouse macrophage (Mf) oxidative burst, secretory activity and expression of surface markers induced in vivo by hypotensive drugs.

Our studies aimed to investigate the effect of hypotensive drugs representing 6 clinically relevant groups of drugs on macrophages involved in antigen processing for further activation of production of antigen-specific antibodies by B lymphocytes in mice.

Mouse donors of oil-induced peritoneal macrophages were treated with one of the drugs: propranolol, carvedilol, captopril, verapamil, amlodipine or olmesartan for 7 days. After harvesting the peritoneal Mf were pulsed with sheep erythrocytes. Afterwards SRBC-pulsed Mf were transferred intraperitoneally into naive recipients, from which blood sera have been collected a week later. Serum titers of SRBC-specific antibodies were measured in direct haemagglutination assay.

Mf from mice treated with particular drug and pulsed with SRBC differently activated B cells secrete antibodies, which was expressed as alterations in the serum titers of antigen-specific IgM and IgG antibodies.

These results show that hypotensive drugs may modulate the immune response by affecting Mf, which further leads to amelioration of antibody-mediated humoral immunity. Future studies are needed to examine the effect of these changes and to determine the usefulness of hypotensive drugs in cardiovascular disorders.

**Keywords: hypotensive drugs, humoral immune response, macrophages, B lymphocytes, antibodies**

## Rapid detection of selected multidrug resistance-associated protein 1 polymorphisms (MRP1/ABCC1) in clinical pharmacogenetics

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Multidrug resistance-associated protein (MRP1/ABCC1) is the first identified member of ABCC subfamily which belongs to ATP-binding cassette (ABC) transporter superfamily. It is ubiquitously expressed in almost all human tissues and transports a wide spectrum of substrates including drugs, heavy metal anions, toxicants and conjugates of glutathione, glucuronide and sulfate. Many ABCC1 polymorphisms are essentially associated with drug resistance and disease susceptibility.

The aim of the study was to evaluate the selected polymorphism of ABCC1 gene among patients with myocarditis and dilated cardiomyopathy.

Genomic DNA was extracted from 100 mL whole blood sample with the use of Quick Blood kit (EURx). The sample of blood was delivered from 2nd Department of Cardiology from 46 patients with clinically confirmed myocarditis and dilated cardiomyopathy. Quantitative and qualitative analysis of genomic DNA extracts was assessed with the use of DNA spectrophotometer (Shimadzu UV-1800) and the electrophoresis in 0.3% agarose. Genotyping of selected polymorphisms in 8 (rs2230669) and 28 (rs2230671) exons of ABCC1 gene was performed by PCR and High Resolution Melting (HRM) analysis using EvaGreen dye chemistry.

Based on the obtained melting curves and |melt analysis software (Bio Rad) genotype for each sample was evaluated. For both polymorphisms rs2230669 and rs2230671 the carriers of heterozygote and homozygote alleles were found.

HRM analysis has been shown to be fast and relatively cheap method for genotyping and may be useful in clinical pharmacogenetics and personalized medicine.

**Keywords:** multidrug resistance-associated protein 1, MRP1/ABCC1, pharmacogenetics

## **Zinc, copper and manganese in dietary supplements for women – analysis their concentration**

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Zinc, copper and manganese are essential minerals for human body. They are required for the proper metabolism. Metals are a part of the enzymes, take participation in synthesis of proteins, nucleic acids, form red blood cells and regulate oxygen transport.

The aim of the work was to evaluate the concentration of zinc, copper and manganese in dietary supplements for women. Comparing the concentrations of the elements provided by the manufacturers and their price.

13 dietary supplements were purchased in the local pharmacies. They are dedicated for women over 19 years old. One of them was for pregnant women in the beginning of maternity. Of each of them 3 tablets were randomly selected which were weighted and pulverized. Portion of around 0,3g were prepared. The concentration of zinc, copper and manganese in the samples were assayed by AAS method.

Assayed concentration of the metals was converted into the content in a single tablet. It can be found that dose of examined preparations had exceed of the Recommended Dietary Allowances (for zinc and copper) and Reference Daily Intake (for manganese).

Some preparations were not unity and contained abnormal concentration of these microelements which not required food regulations.

**Keywords: zinc, copper, manganese, dietary supplements**

INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF GYNAECOLOGY AND OBSTETRICS**

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**Pregnant women's opinions about the physical activities in the pregnancy period.**

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**Introduction:** Pregnancy is a special period for a woman because there is a new life developing in her body. During this period every woman should particularly care about her own body. It influences the health of her child! The physical activity is an immanent part of the healthy life style. Being physical active during the pregnancy has many advantages. For example: the exercises influence in a positive way her cardio-respiratory system or her general sensation. What's more, the labour doesn't necessarily need intensive medical intervention and a woman feels well much quicker.

**Purpose of the study:** The purpose of the study was to find out about the pregnant women's opinion about the physical activities in the pregnancy period. The participants were 20-35 years old. **Reference and method:** The most of the participants (86,5%) is aware of the fact that she has to contact her doctor or midwife before starting exercising. 69,7% of the interviewees declared to have been active (walk or swimming). 92,1% of the pregnant women taking part in the study stated that they felt well after doing some exercises. 83,1% claimed that the physical activity will influence the labour in a positive way. Inadvisable for the pregnant women are extreme sports- according to 87,8% of the participants. What's more, 66,3% interviewees declared that they drill down on the Internet to find out about the physical activities.

**Conclusions:** Young pregnant women are likely to exercise. They are aware of the results the extensive and inappropriate manual effort. What's worrying, nowadays the knowledge source about the physical activity during the pregnancy period is the Internet in most cases.

**Keywords:** Physical activity, pregnancy



## Oligohydramnios - maternal risk factors and clinical implications

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**INTRODUCTION:** Amniotic fluid is a complex substance involved in fetal development, metabolism and exchange of nutrients. Volume of amniotic fluid vary in course of pregnancy and can be assessed during non-invasive ultrasound examination by determining amniotic fluid index (AFI) or deepest vertical pocket (DVP). Oligohydramnios (OH), defined by AFI<5 cm, can be caused by a fetal defect, however etiology of isolated OH has been still poorly understood.

**THE AIM:** Aim of the study was to identify maternal risk factors of OH development and to evaluate perinatal consequences of OH in neonates.

**MATERIALS & METHODS:** Analysed group, consisted of 135 patients, was divided into 4 subgroups: normohydramnios (NH) pregnancies delivered at 35-37 Hbd (n=17) and 38-42 Hbd (n=31) as well as OH pregnancies delivered at 35-37 Hbd (n=41) and 38-42 Hbd (n=46). Medical records of mothers and neonates were analysed, including fetal ultrasound, bacteriological tests, perinatal condition and blood tests of neonates.

**RESULTS:** 38% of OH women had positive cervical culture swab test result, in contrast to 10% of NH women. DM and hypothyroidism occurred in 14% and 13% of OH women, respectively, when in NH women they occurred with frequency of 4% and 6%. Statistically significant ( $p<0,05$ ) differences in neonatal anthropometry, hematocrit and hemoglobin level of late preterm NH and OH neonates were observed. Likewise, these differences were also found between full term NH and OH neonates.

**CONCLUSION:** The study showed that diverse abnormalities occur more often in OH women than in ones with NH. OH results in worsened perinatal condition of neonates, what indicates a particular perinatal care that they need.

**Keywords:** oligohydramnios, amniotic fluid, preterm, full term

## Anatomy of uterine arteries at pregnancy

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Caring for women's reproductive health is a priority of the global health care. According to the WHO definition, a "miscarriage" means spontaneous abortion for up to 37 weeks. If this happens before 22 weeks, talking about abortion, if later - premature birth. The frequency of spontaneous abortion is about 15-20% of all diagnosed pregnancies. Miscarriage is usually a consequence of several factors.

The basic causes are: genetic factors; sexually transmitted infections; endocrine disorders; immune factors; congenital and acquired diseases of the uterus (myoma, malformations, etc) and others. In spite of the extensive coverage of this issue in the literature, we did not find features of uterine vascularization among the possible causes of the threat of miscarriage. The aim is to study the individual variability of uterine arteries in women with normal pregnancy and with the threat of miscarriage.

The material for the study were 98 patients with threatened miscarriage. As a control the 20 women with normal pregnancy were selected. The studies were conducted with the help of ultrasound, morphometry and statistical method.

According to our study in women with threatened miscarriage the right uterine artery diameter was  $4,96 \pm 0,7$  mm. The left same artery was a bit thinner ( $4,87 \pm 0,6$  mm). An interesting result of our study should be considered that in pregnant women in the control group the uterine arteries have significantly (p

**Keywords: miscarriage, uterine artery**

## Obstetric patients' admissions to intensive care unit

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Pregnancy, delivery and puerperium can be complicated by severe maternal morbidity. About 1% of all obstetric patients need to be admitted to intensive care unit (ICU). Management of these patients requires a multidisciplinary approach involving both obstetrician and anesthesiologist.

The objective of this study was to examine obstetric admissions to ICU at Department of Obstetrics and Perinatology UJ CM in Kraków over a 3-year period and to identify the risk factors for the admissions. We retrospectively analysed 86 women who were admitted to ICU during pregnancy and up to 42 days postpartum between 1st January 2014 and 31st December 2016. Demographic data, past medical history, pregnancy, intrapartum and postpartum data, as well as indications for ICU admission were collected. Indications for the admission to ICU were: hypovolemic shock in 30,6% of cases, respiratory failure in 24,7% of cases, preeclampsia accounting for 15,3% of cases and other reasons (23,5%), which included septic shock, acute pancreatitis, disseminated intravascular coagulation (DIC), acute renal failure, pulmonary embolism, pulmonary aspiration and malignant hyperthermia. ICU admission of obstetric patients occurs infrequently.

Basing on the results of our study, the main risk factors for the admission in our patient population were emergency cesarean section and chronic disease in pregnancy. Although obstetric conditions are responsible for most of the hospitalizations, still there are cases of anaesthesiological complications. Therefore, both obstetricians and anaesthesiologists should pay special attention to the patients likely to develop conditions requiring transfer to ICU.

**Keywords:** intensive care unit, puerperium, pregnancy, risk factors, caesarean section

## **Epidermal growth factor receptor occurrence in the serum of women with ovarian cancer or uterine cancer**

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40 women aged 21-78 years with ovarian and uterine tumors. The clinical diagnosis was confirmed by the histopathological examination. The study group consisted of four equal groups: Cystadenoma serosum, Cystadenocarcinoma papillare serosum (FIGO III), Leiomyomata uteri, Carcinoma serosum corporis uteri (FIGO I). The control group consisted of 10 women aged 29-58 years with no pathology in reproductive organs. EGFR concentration was measured in serum by the immunoenzymatic method ELISA, using RayBio Human EGFR ELISA Kit RayBiotech (Norcross, USA). Test sensitivity was 4 pg/ml.

**RESULTS:** Concentration of EGFR in serum of women with ovarian and uterine tumors was significantly higher compared to control ( $p < 0,0001$ ). The biggest concentration of EGFR was observed in ovarian tumors group and it was statistically significantly higher than in uterine tumors group ( $p < 0,01$ ). Furthermore, in women with Carcinoma serosum corporis uteri was statistically significantly higher concentration of EGFR compared to group with Leiomyomata uteri ( $p < 0,01$ ).

**CONCLUSIONS:** Observed changes in concentration of EGFR in the serum of women with ovarian or uterine tumors can suggest the participation of EGFR in pathogenesis of ovarian or uterine tumors.

**Keywords:** EGFR, ovarian tumors, uterine tumors

## Vaginal birth after caesarean section

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**Introduction:** Increased amount of caesarean sections is observed over last few years. Single intervention is not always an absolute contraindication to terminate the next pregnancy by the natural way. In case of no maternal and fetal contraindications, women should have an opportunity to make an attempt to vaginal birth after surgical delivery.

**Aim:** The aim of this paper was to evaluate the process of childbirth and perinatal outcomes in a group of patients who underwent natural birth after previous caesarean section. **Materials and methods:** Retrospective study involved 77 pregnant women with a caesarean section history, who delivered an infant between 2013-2017 in Obstetrics and Perinatology Department in Cracow.

**Results:** The average gestational age in our study group was  $37 \pm 4$  weeks of gestation, 15,6% of women delivered before the 36th week of gestation. The mean time interval between caesarean section and natural delivery was  $5,25 \pm 3,7$  years (12 months most briefly). The average length of labour was: 1st stage -  $5,12 \pm 4,2$ h, 2nd stage -  $26,4 \pm 23$  min, 3rd stage -  $8.6 \pm 4,6$  min. Epidural anesthesia was performed in 22% of patients, 63,6% needed oxytocin during delivery, none of the pregnant women required induction of labor. In the following study no uterus rupture, scar dehiscence, uterine atony and postpartum hemorrhage were observed. 48% of pregnant women needed a lateral episiotomy, 22% had perineal laceration (including 1st and 2nd stage). The average amount of points collected by the infants on the Apgar scale was 9 in 10. minute.

**Conclusions:** Potential risks of vaginal birth after caesarean section should be considered before making a decision. The pregnant woman must give her informed consent. The rate of complications during and after the natural childbirth in patients included in our study was low.

**Keywords:** Vaginal birth after caesarean section

## What kind of factors affect the severity of premenstrual syndrome?

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**Introduction:** Premenstrual syndrome (PMS) encompasses a vast array of mental and somatic symptoms that occur during the luteal phase of the menstrual cycle and disappear with the onset of menstrual bleeding, which significantly interfere with daily activity of patients.

**The aim:** The aim of the study was to assess the impact of lifestyle and selected personal features on the severity of PMS symptoms.

**Methods & Materials:** Data for this study was collected through the online 39-item questionnaire, based on the PMS guidelines of the Royal College of Obstetricians and Gynecologists. The study group consisted of 1365 women at the age of 14 to 56 years. The age of the women in the study was  $23.69 \pm 5.16$ , height  $1.67 \pm 0.06$  m, weight  $61.1 \pm 10.5$  kg. Answers were made on a 5-point Likert scale. Women determined the frequency with which they experienced symptoms of PMS (1 to 5).

**Results:** The alpha-Cronbach ratio for the questionnaire is 0.87. The intensity distribution of PMS is consistent with the Gaussian curve. The results revealed that: sexually active women rated their symptoms as more severe than sexually inactive women (2.87 vs. 2.77). Women who rated their quality of sleep as significantly worse, experienced PMS symptoms more heavily than women who rated their sleep quality as good (3.15 vs. 2.69). The smokers achieved higher score than non-smokers (2.96 vs. 2.81). Women with severe PMS symptoms were significantly more likely to reach for diuretics, SSRI antidepressants, estradiol patches and vitamin B6 supplements.

**Conclusions:** According to this study - quality of sleep, sexual activity and smoking are the most significant features of PMS severity.

**Keywords:** premenstrual syndrome, sexual activity, smoking, lifestyle

## **Influence of IL-2 and IL-10 on proinflammatory cytokine – IL-12 secretion in ovarian cancer cell line SKOV-3.**

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**INTRODUCTION:** Inflammation plays an important role in the pathogenesis of the ovarian cancer. The soluble mediators of the immune system participate in the interactions between the tumor cells and the tumor microenvironment. An important role in antitumor response plays interleukin (IL)-12 which stimulates proliferation, growth and differentiation of immune cells.

**THE AIM:** The aim of the study was to evaluate the effect of stimulation of IL-2 and IL-10 on IL-12 secretion in culture ovarian cancer cell line SKOV-3.

**MATERIALS & METHODS:** SKOV-3 ovarian cancer cell line and peripheral blood mononuclear cells (PBMC) isolated from blood of healthy blood donor were used. Cells were cultured 72 hours at 37°C in an atmosphere of 5% CO<sub>2</sub> in air. The SKOV-3 ovarian cancer cells and PBMC were stimulated by IL-2 and IL-10. Moreover, SKOV-3 ovarian cancer cells and PBMCs were co-cultured together. The concentration of IL-12 in the culture medium was measured by ELISA test.

**RESULTS:** Production of IL-12 was significantly higher in the culture SKOV-3 cells, PBMC, and co-cultures stimulated by IL-2 at 10ng/ml and 25ng/ml compared to the unstimulated cultures. Increasing the dose of IL-2 positively correlated with the increase of IL-12 secretion. There were no statistically significant change in the IL-12 production in cultures stimulated with IL-10 compared to the unstimulated cultures.

**CONCLUSION:** Co-cultures of SKOV-3 and PBMC showed significant changes in cross-talk between cancer and immune cells. Stimulation by IL-2 SKOV-3 and PBMC has influenced on secretion of IL-12. However, IL-10 stimulation of SKOV-3 and PBMC did not cause a significant changes in secretion of IL-12.

**Keywords:** ovarian cancer, proinflammatory cytokines, IL-12, SKOV-3 cells

## Peripheral blood proinflammatory response in women during menstrual cycle and endometriosis

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**Introduction:** Menstrual cycle is a physiological process which is regulated mainly by hormones such as estradiol and progesterone. These molecules have influence on the immune system through stimulation or suppression of proinflammatory cytokine secretion. They are also present in the female reproductive track. Changes in hormone level during different conditions appear to have a different effect on the secretion of interleukin (IL)-1 and IL-6.

**The aim of the study:** Indication differences between IL-1 $\beta$  and IL-6 serum and monocyte secretory levels in women with both normal or abnormal menstrual cycles and women with endometriosis.

**Materials and methods:** Women participating in the study were divided into 4 groups: 10 women with normal menstrual cycles; 10 women taking oral contraception (OC); 10 postmenopausal women and 10 endometriosis patients. IL-1 $\beta$  and IL-6 levels in serum and monocyte culture media were measured by ELISA.

**Results:** The lowest serum levels of the parameters were in women using OC. The highest levels of all cytokines were found in the serum of endometriosis patients. The lowest monocyte activity was observed in follicular menstrual cycle phase and the highest in endometriosis. Monocytes from women using OC secreted similar amounts of cytokines to cells during follicular menstrual cycle phase.

**Conclusions:** Changes occurring during the use of OC, after menopause and during endometriosis are followed by changed proinflammatory monocyte activity, due to the fact of different secretion of cytokines. OC can inhibit inflammatory monocyte properties. Lower serum cytokine levels compared to cell secretion may suggest some control mechanisms of monocyte activity.

**Keywords:** menstrual cycle, proinflammatory cytokines, contraception, menopause, endometriosis



## **Prenatal diagnosis- the need for education**

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**INTRODUCTION:** The wide range of a prenatal diagnosis is available in Poland. They help to evaluate a fetus in different phases of its development, allowing to detect abnormalities. The NFZ recommends them to some women but they are accessible to all pregnant.

**AIM OF THE STUDY:** The aim of the study was to evaluate pregnant women's knowledge about the prenatal diagnosis and estimate the frequency of its execution.

**MATERIALS AND METHODS:** 174 pregnant women aged 18 to 43 from the Silesian Province participated in the study. The study is based on the original questionnaire consisting of 31 questions. Statistical analysis was performed using Statistica software.

**RESULTS:** In the examined group, 139 (80%) women searched for information about prenatal diagnosis, 124 of which were pregnant and 15 were planning pregnancy. The prenatal diagnosis was executed by 136 (78%) interviewed women most commonly among women aged 18-20 and 36-43 years. Despite 80 (46%) of them estimating their knowledge as good or very good, only 10 (6%) of them answered 8 out of 11 questions, which checked their substantive knowledge correctly. In the examined group, only 13 (7.5%) pregnant women considered prenatal diagnosis to be unsafe for a child and 6 (3.4%) connected it with a mother's risk. The most common reasons for the respondents who decided to undergo prenatal diagnosis were a concern about child's health (42 of them; 31%), miscarriages (27; 20%) and their age (19; 14%).

**CONSLUSIONS:** The prenatal diagnosis is popular and frequently executed. Despite the availability of the information materials and media interest, knowledge about them seems to be inadequate among pregnant women.

**Keywords:** prenatal diagnosis, pregnancy

## **Awareness of risk factors, symptoms and diagnosis of Endometrial Cancer among women**

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**Introduction** Endometrial cancer is the fourth most common cancer among women in Poland. The mortality caused by this cancer is higher than average mortality in EU. Early detection is a key providing full recovery or at least lengthen of expected time of life.

**The aim** The objective of our study was to assess women's awareness and knowledge of risk factors and symptoms consisted with endometrial cancer.

**Methods and materials** The work is based on the results of the survey prepared by students and composed of 14 questions. Respondents group consisted of 140 women in age between 18-60. Women were inhabitants of both big cities and villages with differential level of education. The results of the survey have been analyzed using program Statistica and  $p < 0,05$  was considered to show statistical significance.

**Results** According to the results the most known carcinogenic factors are radiotherapy (65%) and genetic background (65%). The study revealed the lack of knowledge about nulliparity being a risk of endometrial cancer (10%). The majority of participants are aware that postmenopausal vaginal bleeding (65%) and abdominal pain (65%) could be the signs of neoplastic process, however they do not know that dysuric symptoms (80%) can also be dangerous. Women are aware that the endometrial cancer can be detected by USG and CT. Surprisingly 70% of respondents think that cytology is also a good method to make a statement of this cancer.

**Conclusions** The research revealed that knowledge about uterine cancer is differential and depends of age, level of education and place of residence. These findings can help to develop the educational materials and programs focused on endometrial cancer.

**Keywords:** endometrial cancer, uterine cancer, risk factors

## **Women at gynecological office- the truth revealed.**

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Society put special attention for health education, which is also considered as a part of prevention system. Prevention system includes for example tests performed in doctor's office. For women special place in this consideration is gynecologist's office, which may be good or bad experience, depending on many features.

The aim of the study was to test frequency of visits in gynecological office. Assessment of reasons for visits. Authors also decided to test what are the most desirable features of gynecologists and which sex is chosen more frequently.

Research involved adult women . Authors compiled a questionnaire containing 24 questions. For statistical analysis authors used IBM SPSS Statistics.

The study included 1993 women over 18 years of age. 93,3% women experienced their at least first visit at gynecologist. 33,8% of surveyed attend to gynecological office at least once 6 months. Over half of visits were held in privat gynecological offices (67,9%) and 39,4% don't mind sex of the specialist. Over 90% of women after sexual initiation went to gynecologist at least once. Cytology was the most common test performed (74,9% of respondents). Authors found a moderate positive correlation between variables education and attending gynecological office ( $r=0,34;p$

**Keywords: gynecologist, women, opinion**

## Vitamin and mineral supplementation among pregnant women in Silesia

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**Introduction:** Proper pregnancy nutrition behaviours are vital for health of mother and child. Besides maintaining balanced diet, usage of proper supplements is a key to obtain good health.

**Aim:** To evaluate pregnant supplementation habits depending on socio-economic and dietary factors as well as sources of knowledge of mentioned issues.

**Materials and methods:** A population based survey was performed on a group of 450 pregnant women in Silesian Voivodeship. The questionnaire, created for the purpose of the study, determined eating and supplementation habits during pregnancy.

**Results:** Completed questionnaires were collected from 327 women (72.6%), aged  $30 \pm 5,6$ . Among 84.5% of mothers declaring supplementation during pregnancy, 85.7% decided to perform it referring to gynecologist's advice, while 13.3% chose independently type and amount of taken supplements. Most of these supplements consist folic acid (57%), vitamin preparations (33%), iron (15.8%) and omega-3 (16.7%). Most of respondents (93%) believe that diet has an impact on child development. Among asked women 94% declared daily intake of fresh fruits and vegetables, 70% of which consumed manufactured legumes and fruits every day. Majority of pregnant (93%) chose homemade food. Internet, as a source of information on proper nutrition was used more often by women with satisfactory (64%) and moderate (63%) economic status, in comparison to women in poor economic status (40%;  $p=0.04$ ).

**Conclusions:** Most of pregnant women does not apply the recommended supplements and proper diet. However, reliance on doctor's knowledge and experience remains the strongest factor determining pregnancy diet and supplementation habits.

**Keywords:** Diet, supplementation, pregnancy

## The influence of the factors determining the severity of OHSS on the length of hospitalization

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"Ovarian hyperstimulation syndrome (OHSS) is rare but serious complication of assisted reproduction cycles.

The aim of this research study was to verify the influence of selected factors on length of hospitalization among women suffering from OHSS.

The study group comprised 99 patients hospitalized on account of OHSS in 2013-2016 in the Department of Gynecological Endocrinology (University Hospital in Krakow). In the study group there was assessed the relationship between the length of hospitalization and the level in the blood of the following: hemoglobin, hematocrit, leukocytes, albumin, total protein, creatinine, alanine and aspartate aminotransferase. The relationship between the length of hospitalization and the severity of OHSS (based on the Navot classification) likewise the age of patients was also examined. The mean duration of hospitalization for OHSS was 7,6 &#xB1; 3,9 days.

The results were as follows: the length of hospitalization significantly increases as the blood level of albumin falls ( $p=0,007$ ) and as the level of hemoglobin ( $p<0,001$ ), hematocrit ( $p<0,001$ ), leukocytes ( $p=0,033$ ) and creatinine ( $p=0,002$ ) rises. The significant correlation was also observed between the length of hospital stay and the severity of OHSS ( $p=0,042$ ). The other parameters such as the age of patients, total protein, alanine and aspartate aminotransferase level did not correlate with the length of hospitalization.

The study revealed that factors which have an influence on the severity of OHSS, that prolong the length of hospitalization are: high levels of hemoglobin, hematocrit, leukocytes and creatinine and low level of albumin.

**Keywords: OHSS, ovarian hyperstimulation syndrome, ovulation induction, length of hospitalization.**

## **Innovative treatment of endometriosis- Plasma Technology.**

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**INTRODUCTION** PlasmaJet is a surgery system, that is designed for cutting, coagulation and removal of soft tissue by vaporisation in open and laparoscopic surgery. It is currently one of the most advanced technologies used in gynecology. The advantages of Plasma technology in surgery are numerous and possibilities of use are still enlarging.

**AIM** The purpose of this work is to present various profits of PlasmaJet in the surgical treatment of endometriosis.

**MATERIALS AND METHODS** Analysis of 34 patients with endometriosis, surgically treated with Plasma technology in 2015 and 2016 in Center of Woman's and Child's health, Zabrze, Poland.

**RESULTS** 34 women have been surgically treated since 2015. The mean age of the patients was 37 years (min=22, max=73). They were diagnosed with: superficial endometriosis of peritoneum (n=7), deep endometriosis of peritoneum (n=4), superficial endometriosis of ovary (n=6), deep endometriosis of ovary (n=9), endometriosis in the scar after caesarian section (n=7), partial obliteration of Douglas pouch (n=4). The mean duration of the surgery was 86 minutes, mean time of hospitalization was 6 days. Re-operation wasn't necessary in any case.

**CONCLUSIONS** Presented results underline the benefits of Plasma technology in the treatment of endometriosis: shorter time of operation, no need of re-surgery, reduction of hospitalization time. With pure plasma energy, surgeons are able to perform a no-touch treatment and minimize the risk of perforation. This innovative technique becomes an irreplaceable method of treatment in deep endometriosis and endometriosis located in places that are not accessible by standard methods.

**Keywords:** endometriosis, PlasmaJet, argon plasma, excision of endometriosis

## **Analysis of complication after modified posterior exenteration in patients with ovarian cancer**

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**INTRODUCTION** Malignant ovarian tumors comprise 29,1% of sex organs cancers and they've got the highest mortality level among them (6% woman's cancer deaths). Ovarian cancer spreads in abdominal cavity through infiltration in peritoneum and greater omentum. Therefore it can quickly reach distant locations in abdominal cavity. Due to lack of characteristic symptoms, ovarian cancers are often diagnosed in advanced stage. Treatment methods of patients with ovarian cancer include surgery and chemotherapy. Surgery is preferable and its recommended type is a procedure with complete resection.

**PURPOSE OF WORK** The purpose of our research work was to analyse the complications after modified posterior exenteration.

**MATERIALS AND METHODS** Analyzed group included 102 patients, which were divided to 2 subgroups. The first group contained patients after hysterectomy with appendages, the second group included patients after modified posterior exenteration. The analysis was based on medical histories.

**RESULTS AND CONCLUSIONS** Analysis revealed, that modified posterior exenteration is associated with more complications including death of patients in postoperative period. The most common complication was reoperation and treatment on the Intensive Care Unit. Performing the surgery requires considerable surgeon's experience and is associated with extended hospitalization. Nevertheless, numerous studies show, that modified posterior exenteration is associated with the best prognosis in patients with advanced ovarian cancer.

**Keywords:** modified posterior exenteration, ovarian cancer, complications

## Childbirth- a beautiful and memorable moment or a lifelong trauma?

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**INTRODUCTION** Many women establish a labour as the most beautiful moment in their life, but they also associate it with pain, stress and anxiety. Despite vast knowledge about labour pain management, we still can't control and reduce it successfully in every parturient.

**AIM** The aim of this work is to assess the intensity of labour pain among parturients and effectiveness of each chosen pain relief management. In addition, a comparison between different pharmacological and nonpharmacological methods has been made.

**MATERIALS AND METHODS** An anonymous survey has been conducted among patients of Center of Woman's and Child's Health in Zabrze. 258 parturients have been recruited. The questionnaire concerned demographic data, visual analogue scale in terms of pain relief and some additional information about labour and pregnancy. Women have been divided into 6 groups: using epidural anesthesia, water birth, gases for pain control, TENS and multi-directional strategy, without pain relief.

**RESULTS** The mean score for the expectations of the pain intensity in labour was  $8.27 \pm 1.65$  measured on a 10 point scale. 92 % (n= 240) patients were very satisfied with the perinatal care. Epidural anesthesia effectively reduced the childbirth pain ( $4.98 \pm 2.26$  p  
**Keywords: labour, labour pain, pain relief, water immersion, epidural anesthesia**



## Young women's knowledge about gynecological examination

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**Introduction** Gynecological examination is one of the basic physical women examinations. Properly executed it can detect many abnormalities. It consists of an interview, general subject examination, breast exam, gynecological exams and ultrasound. A woman should be aware of the purpose of doing this study, and above all it should prepare her physically and mentally.

**Aim of the study** An aim of study was to find out if young women have a correct knowledge about gynecological examination.

**Material and methods** The study covered 189 women living in Poland, aged 18 to 30 years. In study it used a diagnostic survey method- original questionnaire. Women participating in the study were informed about volunteering, anonymity of participation in the research, and using results only for scientific purposes.

**Results** Knowledge about gynecological examination 39.2% of the respondents identified as sufficient, 34.9% as insufficient and 25.9% did not think about it. 20.6% of the respondents were never been at a gynecologist, the most often aims of visits are: preventive visit (48,1%), cytology examination (29.1%) Sources of knowledge about gynecological examination was Internet (31.2%), gynecologist (23.8%), mother (18.5%) and sister (8.5%). More than half of the respondents (51.8%) do not know how to prepare for an exam, while 32.8% do not know what is a gynecological. The most of the surveyed (75.7%) are aware that doctor can not to do a gynecological examination without their consent.

**Conclusions** Young women's knowledge about gynecological examination is insufficient. The basic source of knowledge is the internet and a gynecologist doctor.

**Keywords:** gynecological examination, women, knowledge

## **Factors influencing the execution of lateral episiotomy in nulliparous women.**

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Lateral episiotomy is a surgical incision of the perineum in order to allow baby's head to fit through the vaginal opening. Aim: The aim of this study was to determine factors related to lateral episiotomy procedures in nulliparas.

Materials and methods: The retrospective study included 450 pregnant, nulliparous women who gave birth in Department of Obstetrics and Perinatology JU MC in 2016. The crown-heel length and parietooccipital head circumference were measured using a measuring tape. Pelvimetry was conducted using a pelvimeter. Participants were divided into 2 groups: control (no negative outcomes, n=72) and study (lateral episiotomy performed, n=378). Data was analysed using Wilcoxon's, Chi-squared and Student's t-tests. p 0,05).

Conclusions: Neonatal measurements seem to have a high impact on the frequency of lateral episiotomy.

**Keywords: episiotomy, neonatal measurements, diabetes, delivery**

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## **SESSION OF SEXOLOGY**

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## **Sexting as a new form of sexual contacts**

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Sexting means sending photos, short movies or texts with sexual content to others, usually via mobile phone or Internet.

The purpose of the study was to gain more information about the sexting phenomenon and its possible negative outcomes.

Survey group of two hundred men and women aged from eighteen to forty-six, filled in original questionnaire containing thirty-three open and closed questions. Survey has been carried out from 5th of January 2017 to 1st of March 2017. Gathered data was processed and presented in Microsoft Excel.

Most interviewers answered that men (50,5%) are more likely to send or receive nude photos, videos or messages especially in age group thirteen to nineteen (54%). However, only 44,5% of respondents admits to have sexting experience. Most frequently used sexting app is Facebook Messenger (55,1%). Most common reason for sexting among interviewers are: to spice up the relationship (44,1%) and for entertainment (22,5%). About 37,5% of all surveyed know the conception of "sexting". Majority of surveys (50,5%) state sexting with underage below the age of consent may cause legal consequences.

1. Sexting is more widespread among men and teenagers. 2. Mobile phones and mobile applications are mainly used for sexting. 3. Surveyed are aware of the threat of sharing erotic photos, films and possible consequences of sexting. 4. Sexting is generally practiced by people in long-term relationship to spice it up.

**Keywords: sexting, sexuology, sexual behavior**

## **Do you know that you don't know? Examination of the students' knowledge about the structure and functions of the male and female reproductive system.**

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The basic knowledge about the structure and functions of reproductive system is necessary to responsibility deciding about aspects of sexual health.

The aim of the study was examination the level of the basic knowledge about structure and functions of reproductive system and comparing this level between different students' group.

The group of 1732 college students (1276 female, 456 male) was examined. Students were divided into two groups: the group from medical university and non-medical university. They were also divided into three groups. The category of the division was the field of study: medical, humanities, technical. Students responded on 19 questions with single choice. The questions were created using a textbook for teaching biology in high schools at the basic level. In the test students can get 19 points. Among all the answers were 77,89% correct answers. Women responded better than men, they usually got 15 points. Men got 13,87 points. The group of students from the technical fields presented the lowest level of knowledge from the test (they got 14,29 points). Medical students responded better than non-medical university students, but the difference is not satisfactory. Only 3,46% of all students responded correctly on all questions.

Results show deficits in student's knowledge. The lack of this knowledge we can see also in students of medical university. The reasons of these results are related to the ignoring the lack of this knowledge and do not pay attention to the sense of sexual education. The negative effects of the low level of knowledge are unplanned pregnancies, sexually transmitted diseases, the lack of awareness about the processes in our body.

**Keywords: student, sexual education, reproductive system, sexual health**

## **Adverse effects of prolonged testosterone intake in female-to-male transgender patients.**

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Testosterone Hormone Replacement Therapy (HRT) is a common treatment for female-to-male transgender patients, which allows them to acquire secondary sexual characteristics associated with masculinity, such as increased muscle mass, facial hair and lower tone of voice.

The aim As the frequency of adverse effects of testosterone intake - especially long-term effects - is still unsatisfactorily known both to patients and physicians, the aim of my study was to gather data about such effects.

The study was based on a survey conducted online. It was addressed to English-speaking female-to-male transgender patients who were using testosterone for at least two years. Respondents were asked various questions concerning their transition: age at the beginning of the process, form of received testosterone, observed adverse effects and time of their occurrence.

The majority of research participants observed some adverse effects during the course of their HRT. The adverse effects varied in time – according to the research analysis the most common long-time effect was alteration in blood lipids. The long-term adverse effects were noticeably less frequent for patients who lead a healthy lifestyle with regular physical activity.

Hormone Replacement Therapy is bound with long-term side effects varying in degree of risk for patients' health. As HRT remains the only available therapy for many female-to-male transgender patients, it is crucial to inform patients about the possible adverse effects of testosterone use and the importance of prevention, especially in regards to long-time adverse effects.

**Keywords: testosterone, transgender, hormone replacement therapy**

## **Medical knowledge or ideology? The opinion and level of knowledge about abortion amongst students of medicine.**

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Abortion, in other words, means termination of pregnancy due to exogenous intervention. Performing abortion, which is regulated in law, provides a subject of many disputes. No doubt it relates to the medical society and how medical students, as future doctors can deal with this problem in their future professional life.

Assessment of opinions and knowledge about abortion among medical students.

We sent to 1100 students of 3, 4, 5 and 6th year of medical faculty at Medical University of Silesia a validated, anonymous questionnaire concerning knowledge and suppositions about abortion.

860 (78%) students answered to the questionnaire. 63,7% of the group were female. The average age of the questioned students was 23,4 years old. 95,9% of respondents chose correctly the definition of abortion. Actually in Poland abortion is legal when pregnancy is a result of incest (37,5% answered correctly), rape (94%), irreversible defect of the fetus – until the fetus will be able to survive outside the mother's body (44%), when pregnancy is a risk to mother's health or life (92,7%). 56% of students indicated TV, press and Internet as source of knowledge associated with abortion. According to 9,1% of respondents, abortion should be legal without restrictions, 46% claim that it should have certain restrictions, 39,1% is convinced it should be banned with few exceptions, 3,7% say it should be forbidden, 2,1% have no opinion. 46,5 % claim polish law correctly regulates abortion, 47,3% claim the opposite.

Most of questioned students have basic informations about abortion, however they have little knowledge about valid law regulation.

**Keywords: abortion, medical law, ethics**



## **Strenght of femininity and masculinity by different youth.**

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Social maladjustment is a negative and inadequate response to the demands and prohibitions, and consists in non-compliance with social norms and life tasks.

To assess the impact of social maladjustment on the perception of femininity and masculinity among the students of the Youth center of sociotherapy.

The study included a group of 10 juvenile Sociological Center students aged 16-18. Each of the respondents holds a ruling on the need for special education. The research used a questionnaire consisting of 27 questions, a test of unfinished Rotter sentences and two drawings of women and men, which were hand-made by the respondents. The study was voluntary and anonymous with the prior consent of the center's and the caretaker's consent.

The study allowed to determine the group of symptoms that contributed to the placement of the subjects. Difficulties faced by the students of the center include: conflict with the law, dyslexia, learning problems, family and mental problems. When analyzing family relationships, you can determine that the vast majority of respondents come from an incomplete family or are under the care of a child's home. Evaluation of the essential part of the work consisted in analyzing the responses of the respondents in terms of the female and male characteristics, next stage the analysis of the drawings and the overall evaluation of the whole study.

The study confirmed that the family and life situation influences the perception of femininity and masculinity. However, it is not reasonable to generalize popular beliefs about the so- "Difficult youth" that it is disturbed and has an abnormal picture of reality.

**Keywords: Femininity, masculinity, different youth**

## **Misperception of male body expectations as a potential reason for excessive physical activity in a group of Polish students**

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For many young men an enhancement of attractiveness perceived by opposite sex could be a potential reason for beginning physical activity. This motivation is widely spread especially among singles could lead to as many pros as cons. The aim of the study was to assess how women perceive male muscularity and how it could affect social relations between sexes. The intention was also to compare this assessment with male vision of the issue. An anonymous questionnaire was conducted in electronic form and shared via social media to Polish students (current and previous) studying on Polish Universities. The questionnaire contained 5 questions about male muscularity – the last one was composed of the assessment of each muscle group in a 0-4 scale. The questionnaire was completed by 5200 students (4043 women, 1147 men). Both women and men preferred balanced development of muscularity but apart from this similarity some differences were detected. Male vision of muscularity was statistically different from female perception. Women prefer a less muscular body than men according to comparison of muscularity type assessment. All parts of muscularity were also assessed higher by men except buttocks. The social role of muscularity such as the desire to create new relationships was exaggerated by men. Male vision of their muscularity is not coherent with female perception. This difference could lead to unfavorable effects such as overtraining, self-dissatisfaction or injuries. The awareness of proven incoherence could significantly change an approach towards sport by young athletes.

**Keywords: Muscularity, questionnaire, attractiveness**

## **The knowledge of students studying at the Medical University of Lublin concerning the regulation of conceptions**

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The Birth control is a very popular subject among young people. Students studying at the medical universities should have extensive knowledge about this matter. Transmission of the current knowledge is particularly important in the presence of various contraindications for the use of conception control methods.

The aim of the study was to determine, what scope of knowledge about conception regulation do the students of Medical University in Lublin possess. Reference and method The study was conducted in March 2017. The Questionnaires were completed by 120 students of the Medical University of Lublin. In study was used a diagnostic survey method- original questionnaire.

The definition of contraception was given by 89.9% of respondents correctly. 24.1% of the participants found out difficult to give the correct definition of the Pearl index. The following questions were also difficult to provide an answer for: chemical contraception (action), vaginal sponges (as a complement to other contraceptives) and natural methods. Huge discrepancies were also found in the question about the effect of two-component tablets on a woman's menstrual cycle. The students had extensive knowledge about the occurrence of chemical contraceptives (75.8% correct answers), male condoms (74.2%), cervical discs (82.5%) and single component constituents containing gestagens (88.3%).

Students do not have sufficient knowledge about methods of conception regulation. The additional informations requires knowledge about: contraindications for hormonal contraceptives, natural methods of fertility diagnosis, the action of chemical contraceptives.

**Keywords: methods of conception regulation, students, knowledge**

## "Sexuality and self –perceiving of own body by the disabled"

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A key issue in the process of building a sexual identity among people with disability is to create the positive self- image . A large group of physical disabled people have some difficulties in finding a partner and as well as in fulfilling themselves on the ground of their own sexuality.

The aim of the study was to examine views of disabled people concerning the impact of sexual life on the self- image.

The study included 78 people with physical disability -41 women and 37 men at the age of 20- 50 . The study was conducted by a self-authorship questionnaire.

Search results: 61.8 % of respondents declare that their attitude towards sexual life is important, up 87.9% are sexually active, of whom 55.4% had a direct sexual intercourse. 49% of respondents believe that a sexual activity improves self-esteem. 92% of respondents state that disability is a barrier in the sexual life, while 15% are dissatisfied with their sexual act. 55% of disabled use social networking sites to get involved into sexual behaviors. More than 79% of respondents have complexes. Up to 80% of respondents did not talk about sexuality at their own home.

Complexes make the respondents more likely to search pornographic and cybersex websites to improve their self-esteem . A lack of proper knowledge, education and opportunities for conversations with parents on this topic, affects the negative self-perceiving.

**Keywords: sexuality, disability**

## Activities taken in bed and the quality of sexual life

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According to the rules of sleep hygiene, bed should be used exclusively for sleep and sexual activity. Excessively long time spent in bed and moving non-bedroom activities into the bedroom belong to the factors that fix insomnia and decrease the quality of sleep. The question is whether these factors also affect the quality of sexual life.

The aim of the study is to characterize the time spent in bed and the quality of sexual life of young people, and also to check whether there is a dependence between these variables. The study involved 614 people aged 16-38, including 410 women and 204 men. Data were collected using an anonymous survey, consisting of a self-constructed questionnaire and the Female Sexual Function Index (FSFI) for women and the International Index of Erectile Function (IIEF) for men. Data revealed that 77 % of women respondents and 64 % of men eat meals in bed, 58 % of women and 53% of men watch TV in bed, 99 % of women and 98 % of men use electronic devices in bed, 93 % of women and 86 % of men read books in bed, 85 % of women and 69 % of men study in bed. 19,7 % of respondents smoke cigarettes but only 1 % of women and 3 % of men smoke in bed. Among the examined women 22 % present clinical sexual dysfunction. Among the men 43 % have dysfunction. The sexual dysfunctions occur less often between the people, who live in relationships, than among the people who define their marital status as free – regardless of sex. There was no significant correlation between activities taken in bed, time spent there and quality of sexual life of the respondents. According to the results of the study, there is no correlation between activities taken in bed and quality of young people's sexual life.

**Keywords:** FSFI, IIEF, activities in bed

## Is the relationship of homosexual women a modern alternative to family?

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In The Constitution of The Republic of Poland appears a notation - „Marriage, being a union of a man and a woman, as well as the family, motherhood and parenthood, shall be place dunder the protection and care of the Republic of Poland.”. For opponents of the equal rights for affiliative and nonmonogamous relationships, this notation is a sufficient reason to find the discussion unfounded. Nonetheless, it does not mean that Poland lacksthis kind of relationships and that only a heterosexual person wants to act a parental role. The goal of the work is analysis of the homosexual relationship between two women, who raise a child together. The study in volves one couple of homosexual women, who have recently started to play the role of biological and social mother. The authors have developed a proprietary question naire including a few closed and a numer of open questions including in their scope issues connected to sexual orientation, social relationship and problem of the formal regulations concerning homosexual couples in Poland and worldwide. Authors noticed a numer of problems faced by female couplereLATED to conceiving and raising a child. Social reaction to their maternity and socio-legal obstacle turned out to be annex ceptional trouble.

1. In Polish law there is a notice able lack of rules, which would be out wardly applying to homosexual people and would protect their rights in exception alway.
2. In Polish society, the occurance of maternity by two homosexual women often does not found acceptance, stigmatization of the couple is observed, exclusion is based on natural and legal norms.
3. It can be seen that family and relatives of homosexual person accept their form of relationship, sexual orientation and the decision about shared maternity, which points on the social changes in Poland and around the world.
4. The couple of homosexual womens ighalizes the need to educate the Polish society in the subject of the right to choose a sexual orientation and the need to fulfill in the parental role.
5. The couple of homosexual women has received full acceptance and kindness from the medical staff during the whole pregnancy and labour.
6. For both of the homosexual women the possibility to full fill in the mother's role has became the very first priority in their lives.

**Keywords: woman, homosexuality, motherhood, child, law, Poland**

## Gender - knowledge and opinion

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First mention of term „gender” dates back to the 1960s. In Poland this appellation was widespread because of Council of Europe Convention on Preventing and Combating Violence Against Women and Domestic Violence. Appearance of this document in Poland was cause of controversial and it was subjective presented by media.

The aim of the study was the assessment of knowledge and opinion about gender. Authors compiled questionnaire consisted of 25 questions. The study included people in age of 18 to 85 years. For statistical analysis authors used IBM SPSS Statistics.

The study involved group of 2287 adults. Only 2,9% of the respondents haven't ever heard about gender terminology. However, the „Socio-cultural gender” definition was not known by 22,8%. According to surveyed, mass media are the main source of information about gender (64,8%). 26,9% of the respondents haven't considered gender as „something wrong”. The most popular answers for the question about what is gender were that gender is scientific term(40,1%) or social phenomenon (38%). The vast majority of surveyed (26,9%) claims that gender assumptions shouldn't be taught in polish schools. There is a correlation between varies „ Attitude to faith” and „ Do you consider gender as something wrong” ( $r= 0.6$ ,  $p$

**Keywords: gender, sex, opinion**

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## **SESSION OF CARDIOLOGY**



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## Risk factors and the course of ACS in elderly and young patients

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Cardiovascular diseases are associated with the presence of risk factors, occurs at different ages and are characterized by different prognosis. Older people are potentially different due to the risk factors and the course of the disease.

The aim of the study is to compare the nonmodifiable and modifiable risk factors of the cardiovascular disease and the course of acute coronary syndrome (ACS) in young and elderly patients.

Fifty-four pts with ACS were included in the study, 24 pts in age  $\geq 90$  (gr. S - Senior group; age  $93,0 \pm 1,8$  years) and 30 pts in age igher troponin concentration in the course of ACS ( $1.62 \pm 1.6$  vs  $1.01 \pm 0.5$  ng/ml, p ng discharge).

Risk factors that differentiate the young and elderly patients with ACS are gender and smoking. Elderly patients require additional caution due to the insufficiency of renal function and intercurrent degenerative valve defects. In the age of invasive treatment of ACS, the course of this disease does not differ significantly between elderly and young patients.

All patients were invasively treated with primary coronary angioplasty with stent implantation. No significant differences were observed between groups in the frequency of occurrence of each type of ACS: unstable angina, NSTEMI, STEMI, and polyvascular disease (PVD). Group S was characterized with a significantly higher troponin concentration in the course of ACS ( $1.62 \pm 1.6$  vs  $1.01 \pm 0.5$  ng/ml,  $p < 0.025$ ). There were no significant differences between the primary LVEF and the one during discharge. The hospitalization time was similar in both groups ( $4.66 \pm 2.5$  vs.  $4.13 \pm 2.6$  days).

**Keywords:** ACS, elderly patients, risk factors

## **Analysis of basic clinical data in patients with electrical storm**

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Implantable cardioverter defibrillator (ICD) prolongs life and prevents of sudden cardiac death in patients with heart failure. Electrical storm (ES) is a clinical condition defined by 3 or more VT or appropriate ICD interventions within 24 h.

Basic clinical characteristics and comparison between elementary ICD's implantation parameters and ES occurrence in patients with heart failure.

85 patients with ES hospitalized in SCCS in the years 2009-2016, who had 106 ES incidents combined. The basic clinical analysis and comparison of elementary echocardiographic parameters were performed.

In 69% of patients the cause of heart failure was coronary artery disease, of these, 80% was in CCS 2. 99% of ICD's were implanted due to primary prevention of sudden cardiac death. 32,9% of patients declared FA in medical history. 20,5% suffered from diabetes. Average LVEF stood at 24% while implantation. ACS occurred at 2,68% of patients during ES. 2% suffered from decompensated heart failure. Coronarography was performed in 53% of cases and PCI in 21,6%. 21,9% of patients underwent VT ablation. Average EF during ES stood at 27%.

Most of the cases in the analysed group of patients with ES were patients with CAD, who underwent ICD implantation due to primary prevention. 1/3 of patients had FA. Approximately 1/5 of patients during ES required coronary revascularization or/and VT ablation. No substantial LVEF changes during electrical storm were noted.

**Keywords: electrical storm, implantable cardioverter defibrillator**

## Fragmented QRS complex in patients qualified for primary prevention of sudden cardiac death

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Fragmented QRS (fQRS) is an electrocardiographic parameter of cardiac injury, scar or fibrosis. Fragmented QRS is defined as a presence of an additional R wave (R') or notching in the nadir, downstroke or upstroke of the R or S wave observed in two contiguous leads.

To assess the correlation between fQRS, ejection fraction and postinfarction ECG changes in patients (pts) qualified for primary prevention of sudden cardiac death (SCD)

Retrospective analysis of 41 pts with ischemic heart disease (IHD) and implanted cardioverter-defibrillator (ICD) in primary prevention of SCD (5 females, 36 males), mean age at implantation  $66 \pm 9$  years. Analysis included 31 pts (75,6%) after ST segment elevation myocardial infarction (STEMI). All pts had left ventricular ejection fraction (EF)  $\leq 35\%$  with mean EF  $27.8 \pm 5.4\%$ . The presence of fQRS was determined after the ECG registration at 40 Hz and 150 Hz filters.

39 pts (95,1%) had fQRS in at least one location, most frequently (32pts) fQRS was observed in the leads corresponding to the inferior wall, the least common location was the anterior wall - 19 pts. Mean duration time of the QRS was  $133 \text{ms} \pm 27$  and only 13 pts had  $\text{QRS} \leq 120 \text{ms}$ . Wall Inferior Lateral Anterior II;III;aVF I;aVL;V5-V6 V1-V4 Prior STEMI 14 7 18 fQRS presence 32 30 19

Fragmented QRS is a common finding in patients with IHD and low EF qualified for ICD implantation. fQRS does not correlate either with EF value or STEMI location. The further studies of this electrocardiographic phenomenon in a larger population will be useful to determine the significance of fQRS as an SCD risk marker.

**Keywords: myocardial scar, fragmented QRS, sudden cardiac death, primary prevention**

## **Impact of Remote Monitoring on long-term prognosis in Heart Failure patients with Atrial Fibrillation from COMMIT-HF Trial Registry**

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Atrial Fibrillation (AF) as well as Heart Failure (HF), the two epidemics of XXI century, exacerbate each other and because of that prevalence of both disorders simultaneously puts physician in a difficult position. Remote monitoring (RM) of implantable cardioverter–defibrillators (ICD) and cardiac resynchronization therapy devices (CRT-D) might improve prognosis in heart failure (HF) patients. Purpose of the study

The aim of our study was to assess the impact of RM on outcomes of therapy in HF patients with AF and implanted ICD/CRT-D.

We acquired patient's data from COMMIT-HF, a single-center, ongoing prospective observational registry. Population consists of non-selected patients with systolic HF. We enrolled patients with AF and divided them into two groups based on RM presence. The primary end-point was 12 months all-cause mortality.

Out of 2730 patients with HF from COMMIT-HF our analysis took into consideration 342 patients with AF and first implantation of ICD/CRT-D. RM-present group counted 180 patients and control group 162 patients. RM group had more significant prevalence of atrial hypertension and less occurrence of severe tricuspid valve regurgitation. Other parameters, such as echocardiography, electrocardiography, pharmacological therapy were similar in two groups. During one – year observation 26 patients died (4 in RM group and 22 in non-RM group). Our study revealed, there was a statistically significant lower one year mortality in RM group (2.22% vs 13.58%,  $p < 0,0001$ ).

Remote monitoring of ICDs/CRT-Ds in HF patients with AF is an independent factor and significantly reduces long-term mortality.

**Keywords: Heart Failure, Atrial Fibrillation, Remote monitoring, COMMIT-HF Registry, Implantable Cardioverter–Defibrillators, Cardiac Resynchronization Therapy Devices**

## Predictive value of serum uric acid level in patients with heart failure

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Due to the poor outcomes in heart failure there is a need for inexpensive and simple prognostic factors. Serum uric acid is one of many tools that could be used as a prognostic marker in HF progression.

The relationship between the serum uric acid level (SUA) and 12-month mortality in patients with heart failure (HF).

2730 patients hospitalized with systolic HF. Excluding a history of therapy with xanthine-oxidase inhibitors, dialysis or known neoplastic disease, 1267 patients were analyzed. According to the definition of hyperuricemia, the population was divided into groups with normal and elevated SUA level (gr.1  $SUA \leq 420 \mu\text{mol/l}$ ,  $n=718$ ; gr.2  $SUA > 420 \mu\text{mol/l}$ ,  $n=549$ ).

Patients' demographics were: age  $62,2 \pm 13$  vs.  $61,7 \pm 13$  years,  $p=0,4$ ; gender 74,7 vs. 83,6% male,  $p < 0,05$ . There were no statistically important difference between NYHA classification or etiology of HF. We noticed more frequent occurrence of comorbidities (AF: 24,8 vs. 36,8%,  $p < 0,005$ ; CKD: 16,7 vs. 37%,  $p < 0,005$ ) and worse LVEF (26,5 vs. 25,3%,  $p < 0,05$ ) in group with hyperuricemia. Mortality during the 12-month observation was significantly higher in group with elevated SUA level (9,9 vs. 13,5%,  $p=0,04$ ). Furthermore, patients with hyperuricemia were divided into tertiles. Mortality was similar within groups of normal SUA level and first tertile (gr.1  $SUA \leq 420 \mu\text{mol/l}$ : 9,9%; tertile1  $SUA$  420-468  $\mu\text{mol/l}$ : 9,3%) as well as within the second and third tertile (tertile2  $SUA$  468-528  $\mu\text{mol/l}$ : 15,3%; tertile3  $SUA > 528 \mu\text{mol/l}$ : 15,9%,  $p=0,04$ ).

The results of this analysis show the relationship between elevated serum uric acid level and worse outcomes in patients with HF and suggest a possible cut-off SUA level for high risk patients.

**Keywords:** serum uric acid, heart failure, prognosis

## **Apnea-hypopnea index in patients with acute myocardial infarction with and without ST segment elevation**

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Sleep apnea (SA) is proven to be associated with increased risk of adverse cardiovascular events. Polysomnography is recommended to diagnose SA, however, the apnea/hypopnea index (eAHI) may also be calculated from Holter recordings.

Assessment of eAHI in patients (pts) with acute myocardial infarction with ST segment elevation (STEMI) and without ST elevation (NSTEMI).

Clinical data of 139 pts (48 females, LVEF  $40\pm 12\%$ , age  $67\pm 24$  years, STEMI- 47 pts, NSTEMI- 92 pts) hospitalized for MI were analyzed retrospectively. Holter recordings were performed at fifth day of acute MI. Control group consisted of 50 pts suspected of coronary heart disease without significant lesions in coronary angiography. eAHI index was calculated from Holter recordings, and  $eAHI > 15$  was thought to indicate a high probability of SA.

Both groups with STEMI or NSTEMI had higher prevalence of  $eAHI > 15$  than the control group (66% vs. 50% vs 14%, with  $p < 0.05$  was found in STEMI pts ( $p = 0.07$ ). eAHI was higher both in STEMI pts -  $24,6\pm 17,1$  and NSTEMI pts -  $19,4\pm 15,8$  compared with controls -  $8,4\pm 8,3$ , pbe frequent in patients with recent myocardial infarction, especially with ST elevation.

Further observation is needed to obtain the clinical relevance of this finding, and to prove that Holter monitoring might be used as a screening tool in diagnosing SA.

**Keywords: myocardial infarction, sleep apnea, apnea-hypopnea index**



## **Prognostic implications of pre-implantation severe mitral insufficiency in patients treated with cardiac resynchronization therapy**

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Over the last 20 years the prognosis of patients with chronic heart failure (HF) have ameliorate remarkably. In addition to pharmacological therapy a major role in the treatment of HF plays cardiac resynchronization therapy (CRT). A common finding in HF patients is functional mitral regurgitation (MR) which affects on their prognosis. There is low evidence about impact of pre-implantation severe MR especially on long-term prognosis in patients with HF treated with CRT.

The aim of the study was to assess the impact of significant pre-implantation MR on mortality in patients treated with CRT included in a large real-world cohort registry.

The study involved 273 patients with systolic HF who were registered from 2009 to 2015 in the ongoing single-center CONTEMPORARY MODALITIES IN TREATMENT OF HEART FAILURE (COMMIT-HF). Patients were divided into two groups depending on severe MR presence. Patients with mitral valve prolapsed, MR repair or replacement before CRT implantation were excluded.

Of the 273 patients 15% (n=41) had severe MR (MR+), and in 85% (n=232) severe MR (MR-) was not observed. MR+ patients had more often prevalence of: atrial fibrillation (41.5% vs 24.6%, p=0.02), chronic kidney disease stage III-V (48.8 vs 29.7%, p=0.01), and higher left ventricle end diastolic volume (282±111 vs 206±83, p=0.02). Three-year all-cause mortality was higher in the MR+ (36.6% vs 18.1%, p < 0.001)

The presence of severe mitral regurgitation in patients with HF treated with CRT significantly reduces the expected time of survival.

**Keywords: cardiac resynchronization therapy, mitral regurgitation, heart failure**

## **ECG characteristic of left ventricular hypertrophy in patients with hypertrophic cardiomyopathy (HCM) in terms of risk of SCD**

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Hypertrophic cardiomyopathy (HCM) is a disease of the heart muscle which is usually genetically determined. One of the most important parameters characterizing it is increased thickness of the wall of the left ventricle, which cannot be explained solely by improper load. The risk of sudden cardiac death (SCD) is also higher.

Assessment of electrocardiographic criteria for left ventricular hypertrophy (LVH) in patients (pts) with HCM having different risk of SCD.

Clinical data of 15 pts (9 females, age 59+/-9 years) with HCM was analyzed retrospectively. Seventeen ECG criteria for LVH were evaluated and compared to echocardiographic results. SCD risk was calculated using web HCM risk calculator and results >4% were regarded as increased.

Among 27 patients with HCM, 15 patients with electrocardiographic QRS duration 35 mm (60%) index. In patients with the SCD-Risk score > 4% there were less ECG features of the left ventricular hypertrophy than in patients with a lower risk. The history of both syncope and nsVT was more frequent in patients without LVH criteria in ECG.

According to the results, ECG criteria for LVH are not commonly present in HCM patients and cannot be used to confirm left ventricular hypertrophy. Moreover, the relation between ECG criteria of LVH and SCD risk is unclear. The history of syncope and nsVT seems to be a powerful factor in calculation of the risk of SCD.

**Keywords:** Left ventricular hypertrophy, electrocardiography, hypertrophic cardiomyopathy, sudden cardiac death

## **Sleep-disordered breathing (SDB) as a predictor of implantable cardioverter-defibrillator (ICD) intervention in patients after myocardial infraction (MI)**

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An implantable cardioverter-defibrillator (ICD) is a device increasingly used for prevention of sudden cardiac death in patients after myocardial infraction (MI).

The aim of this study was to evaluate the relevance of the occurrence of sleep-disordered breathing (SDB) as the predictor of appropriate ICD interventions.

The study group consisted of 125 patients (114M, age  $60\pm 7$  years, LVEF  $35\pm 9\%$ ) with the history of MI who underwent ICD implantation for primary prevention (23M, age  $58\pm 8$ , LVEF  $31\pm 8\%$ ) or secondary prevention of SCD (91M, age  $62\pm 8$ , LVEF  $38\pm 10\%$ ). Patients were followed for at least 2 years (median follow-up period  $18\pm 11$  months). Holter recordings before ICD implantation were used for apnea/hypopnea index (eAHI) analysis.

SDB features ( $eAHI \geq 15$  episodes/hour) were observed in 61 patients (48,8%). There was no significant difference in probability of adequate ICD intervention in patients with and without SDB features, neither in primary nor secondary ICD prevention.  $eAHI > 15$  were slightly more often observed in patients with secondary prevention 53% vs 33% ( $p=0,07$ ), but no relationship between the number of interventions and the SB features presence has not been shown. No significant correlation between age, LVEF and eAHI was found.

SDB features obtained as eAHI from Holter recordings are rather common in patients after MI, but it seems to not be related to the more frequent occurrence of appropriate ICD interventions.

**Keywords: sudden cardiac death, implantable cardioverter-defibrillator, apnea/hypopnea index**

## Right ventricular systolic dysfunction in development of cardiac cachexia in patients with pre-capillary pulmonary hypertension

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Mechanisms leading to cardiac cachexia (CC) are not well known. According to the data, in patients with left-sided heart failure development of CC may be secondary to right ventricular (RV) dysfunction, which is associated with poor prognosis. Association between development of CC and isolated RV systolic dysfunction has not yet been determined.

Assessment of prevalence of CC among patients with pre-capillary pulmonary hypertension (PH) and its association with RV systolic dysfunction.

Between 2015 and 2016, consecutive patients hospitalized in a PH reference center were enrolled in the study. Anthropometric measurements, right heart catheterization and heart magnetic resonance were conducted. CC was diagnosed in case of unintentional weight loss >5% during previous six months and abnormalities in laboratory parameters (CRP, hemoglobin, albumins). Severity of PH was assessed based on: WHO functional class, 6-minute walk distance, NT-proBNP level and hemodynamic parameters.

In the study we enrolled 88 patients with PH. 65 patients were treated with PAH-specific therapy. CC was diagnosed in 22 patients. Patients with CC were characterized by more severe disease, defined by following markers of PH severity: worse WHO functional class ( $2.9 \pm 0.5$  vs.  $2.5 \pm 0.5$ ;  $p=0.01$ ), higher NT-proBNP level ( $2609 \pm 2018$  vs.  $1409 \pm 1703$  pg/mL;  $p=0.01$ ), shorter 6-minute walk distance ( $296 \pm 106$  vs.  $370 \pm 126$  m;  $p=0.02$ ), higher right atrial pressure ( $6.3 \pm 4.3$  vs.  $4.4 \pm 3.5$ ;  $p=0.04$ ) and lower RV ejection fraction ( $33.2 \pm 6.8$  vs.  $41.8 \pm 13.1$ ;  $p=0.01$ ) than patients without CC.

RV ejection fraction is a predictor of CC in patients with pre-capillary PH.

**Keywords: cardiac cachexia, pulmonary hypertension, RV systolic dysfunction**

## **Apnea-Hypopnea Index measured from Holter recordings in patients hypertrophic cardiomyopathy**

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Hypertrophic cardiomyopathy (HCM) is associated with higher occurrence of cardiac arrhythmias higher risk of sudden cardiac death (SCD). Choosing appropriate prediction tools is a key factor to correctly assess SCD risk of patients with HCM.

To assess if Apnea-Hypopnea Index (AHI) may be a useful parameter in SCD- risk stratification in patients with HCM.

Data of 33 patients with HCM admitted to Cardiology Ward in years 2014-2016 was retrospectively analyzed. We used clinical and echocardiographic data, ECG and Holter recordings. The risk of SCD was evaluated based on HCM-risk calculator (ESC recommendations). Heart rate, its variability (HRV) and AHI obtained from Holter recordings were used.

In 9 patients risk $\geq$ 4 was found 7M in age 34-75 years, and in 24 patients risk 15 in high risk group compared with 10 patients 30,3% in low risk group with p=ns. The history of nsVT and synope was significantly more frequent in high risk pts (p=0.03 and p=0.002).

The presence of AHI did not differentiate high and low risk HCM patients. SCD-risk is affected mostly by history of syncope and nsVT presence.

**Keywords: HCM, hypertrophic cardiomyopathy, AHI, Apnea-Hypopnea Index**

## Right and left - hemodynamic congestion in patients with chronic heart failure with reduced ejection fraction

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Hemodynamic congestion remains a key prognostic factor in heart failure (HF). Recent findings suggest a sum of right atrial (RA) and pulmonary capillary wedge pressure (PCWP) to be prognostic value in heart failure with reduced ejection fraction (HFrEF). However, the association of RA and PCWP with prognosis in HFrEF remains poorly understood

We were to investigate the association of RA and PCWP with prognosis at different levels of hemodynamic congestion and to compare them with traditional risk factors

239 HFrEF patients (age:  $52 \pm 10$  years, female: 14%, NYHA:  $2.9 \pm 0.9$ , LVEF:  $25 \pm 11\%$ ) underwent right-sided catheterization as part of heart transplantation work-up. In each patient we have counted the sum of RA+PCWP and RA/PCWP (ratio). All patients were put to 1 out of 4 groups according to median value of the sum count (21 mmHg) and ratio (0.33): 1 –sum and ratio below medians, 2-low sum-high ratio, 3-high sum-low ratio, 4-sum and ratio above medians. Cox method was used to estimate adapted relative risk of death for each group of patients according to the best survival on Kaplan-Maier

Group 1: sum:  $14.4 \pm 4.2$  [mmHg]; RA  $2.3 \pm 1.1$  [mmHg]; PCWP  $12.1 \pm 3.7$  [mmHg]; ratio:  $0.20 \pm 0.08$ ; %Death 33; Group 2: sum:  $13.2 \pm 4.4$ ; RA  $5.0 \pm 1.9$ ; PCWP  $8.2 \pm 3.2$ ; ratio  $0.74 \pm 0.81$ ; %death 37; Group 3: sum:  $30.1 \pm 8.4$ ; RA  $5.3 \pm 2.2$ ; PCWP  $25.9 \pm 7.0$ ; ratio  $0.21 \pm 0.06$ ; %death 26; Group 4: sum  $32.9 \pm 8.8$ ; RA  $11.2 \pm 3.8$ ; PCWP  $21.7 \pm 6.7$ ; ratio  $0.55 \pm 0.24$ , %death 52. Kaplan-Maier analysis showed worst survival in group 4 (log rank  $p=0.001$ )

The high sum and ratio of RA and PCWP is associated with poor prognosis. The reason for elevated ratio may be caused by high RA and low PCWP.

**Keywords: chronic heart failure, reduced ejection fraction, hemodynamic congestion**

## **Cardiac arrhythmias and left ventricular hypertrophy in patients with aortic valve stenosis**

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Electrocardiographic and echocardiographic left ventricular hypertrophy (LVH) is an independent risk factor for sudden cardiac death in general population. The relationship between electrocardiographic LVH features and presence of cardiac arrhythmias in patients (pts) with aortic valve stenosis (AS) is not clear.

Assessment of the association between electrocardiographic LVH and cardiac arrhythmias in pts with AS.

Electrocardiograms of 47 pts (24 males, age:  $74 \pm 15,6$  years) with AS were assessed for LVH and 24-hour-ECG monitoring was analyzed for cardiac arrhythmias.

Left ventricular hypertrophy was confirmed by echocardiography (LVMI:  $134 \pm 36 \text{g/m}^2$ ) in 40 (85%) of 47 pts. ECG features of LVH were found in 29pts (62%). Supraventricular tachycardia (SVT) was observed in 25 pts (53%), permanent atrial fibrillation (AF) in 5 (10,6%), paroxysmal AF or atrial flutter in 3 (6,4%) cases. There were no significant differences ( $p > 0,05$ ) in age, echocardiographic parameters and presence of LVH in ECGs between pts with and without supraventricular arrhythmias. Non-sustained ventricular tachycardia (nsVT) was found in 3 pts (6,4%) and premature ventricular contractions (PVC) exceeding 100/24-hour in 10 pts (21%). Patients with nsVT or frequent PVC suffered more often from diabetes mellitus ( $p = 0,01$ ) and had a history of previous myocardial infarction ( $p = 0,04$ ), but prevalence of electrocardiographic LVH was similar to pts without ventricular arrhythmias.

Patients with aortic valve stenosis and LVH features in electrocardiograms did not characterized by higher prevalence of supraventricular and ventricular arrhythmias.

**Keywords:** cardiac arrhythmias, left ventricular hypertrophy, aortic valve stenosis

## **The diagnosis of thoracic aortic aneurysms including the proceedings and the prognosis of patients in 5 - year clinical follow-up**

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Aortic aneurysm is an enlargement of more than a half in comparison to the correct diameter. On the list of leading causes of death in the general population they are on 18th place. Unrecognized and untreated can lead to aortic rupture and death of the patient.

The aim of this study was the analysis of thoracic aortic aneurysm diagnoses including proceedings and prognosis of patients - in the 5 - year clinical follow-up.

The study group consisted of 50 (100%) patients in which was 9 women (18%) and 41 (82%) men, aged from 33 to 92 years. All of these patients were diagnosed with thoracic aortic aneurysms and were hospitalized in the Department of Cardiology in 2010 - 2014. The results were statistically analyzed using Microsoft Office.

In the studied group (50; 100%) were 38 (76%) dissecting aneurysms, 12 (24%) true aneurysms, while in the DeBakey classification were: type I - 3 (7,9%), type II - 30 (78,9%) and type III - 5 (13,2%). According to the Stanford classification there were: type A - 32 (84,2%) and type B - 6 (15,8%). 25 (50%) patients were treated surgically and 25 (50%) - conservatively. 48 (96%) patients stayed alive, while 2 (4%) patients died - one treated conservatively and one surgically.

In the studied group of patients, dissecting aneurysms were the most frequent but taking under consideration the Stanford classification - type A, while according to the DeBakey classification - type II. Neither surgical nor pharmacological treatment of patients with aneurysms of the thoracic aorta have not shown superiority over these methods and mortality during hospitalization in both treatment groups was the same.

**Keywords: thoracic aortic aneurysms**



## **Truncus arteriosus associated with interrupted aortic arch – association with higher risk of mortality and reoperation**

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Patients suffering from both interrupted aortic arch (IAA) and truncus arteriosus (TA) are in higher risk of death and serious complications than children with isolated lesions.

Characteristic of patients with combined IAA and TA admitted to University Children's Hospital of Cracow from 2002 to 2015.

11 pediatric patients (4 males (36%) and 7 females (64%)) identified with both IAA and TA. The anatomy of these patients was TA type I in 8 (73%) cases, type II in 2 (18%) cases and 1 (9%) case with type II/III. 8 (73%) patients had IAA type B and 3 (27%) had IAA type A. In 9 (81%) patients TA and IAA was combined with other congenital heart disease. One of the patients was operated in different facility and was not included in treatment data analysis. All of data were collected retrospectively from medical records.

The surgery was performed mean 27 days after birth, with the mean weight of 3487 grams. All of patients (11 children) were treated surgically, 7 (70%) patients required second open heart surgery, 3 (30%) of them underwent third and fourth surgical procedure. In 8 (80%) patients cardiac catheterization was performed after primary surgery. 5 (50%) of them required second procedure of cardiac catheterization, 3 (30%) had the third and 1 (10%) had the fourth one. 4 (36%) of cases resulted in death.

The combination of IAA and TA carries the high risk of mortality. The treatment of these patients often requires many invasive medical procedures, such as repetitive cardiac catheterization and more than one open heart surgery.

**Keywords: Interrupted aortic arch, truncus arteriosus, pediatric cardiology**

## Secondary school students' knowledge on risk factors of cardiovascular diseases

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Cardiovascular diseases constitute the most frequent cause of death, even exceeding neoplastic causes. The so-called risk factors, both modifiable and non-modifiable, play a significant role in their development.

The evaluation of secondary school students' knowledge on risk factors of cardiovascular diseases.

200 secondary school students, aged 16-19, participated in the research (137 girls and 63 boys). The research was conducted by own survey questionnaire.

Vast majority of respondents (187; 93.5%) appropriately regarded obesity, hypercholesterolemia and smoking as modifiable risk factors. Nearly half of respondents (96; 48%) appropriately recognised abdominal obesity based on waist size measurements and in vast majority (157; 78.5%) they marked BMI scope. Most (136; 68%) knew about arteriosclerosis, aftermaths of excessive consumption of salt (158; 79%), Fast-Food (184; 92%) meals and alcohol (139; 69.5%). A small group (63; 31.5%) indicated sources of cholesterol in food, appropriately defined a notion of HDL (72; 36%) and BMI (73; 36.5%). A decisive group indicated that sport influences only silhouette shaping (154; 77%).

Secondary school students' knowledge on risk factors of cardiovascular diseases is incomplete. There is a need to implement health education aiming at constraining a distribution of risk factors at young age and their elimination, and as a result prevention of development and progression of cardiovascular diseases.

**Keywords:** students' knowledge, risk factors

## The influence of positive family history on myocardial infarction's symptoms awareness among patients without cardiovascular diseases

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Myocardial infarction is one of the most common causes of sudden death in the worldwide population. The knowledge about symptoms of this disease and proper respond to them may more than once save patient's life.

We aimed to assess skills of recognizing and responding to the first symptoms of a myocardial infarction among people with or without positive family history of cardiovascular disease (CVD).

The study involved 444 consecutive patients without CVD attending primary health care in Malopolska. The data was collected using questionnaire including questions about respondents' family history, knowledge of myocardial infarction and emergency numbers.

As many as 192 (44.0%) patients were characterized by positive and 244 by negative family history of CVD. Only 8 (0.02%) people did not provide the information about their family history. The average number of correctly recognized symptoms (out of 5 suggested) was  $2.82 \pm 1.5$  in patients with positive family history and  $2.72 \pm 1.5$  in patients with negative family history of CVD,  $p=0.62$ . There was no difference in identification any of the analysed symptoms or reaction to their appearance in both groups ( $p>0.05$ ). As one of myocardial infarction symptom the most recognizable was chest pain correctly chosen by 174(90,6%) patients with positive family history and 212(86,9%) patients with negative family history of CVD. Only 399(89,86%) respondents were able to give at least one accurate emergency number (999 or 112).

The knowledge necessary to recognize and respond to the first symptoms of a myocardial infarction in patient without CVD is unsatisfactory. Positive family history does not affect this knowledge.

**Keywords:** family history myocardial infarction symptoms awareness knowledge emergency number

## **The Impact of Chronic Systemic Low-level Inflammation on Depressed Left Atrial and Left Ventricular Compliance in Heart Failure with Preserved Ejection Fraction: A Retrospective Analysis of Medical Records**

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Heart failure with preserved ejection fraction (HFpEF) has been traditionally attributed to excessive afterload imposed on the left ventricle (LV). A novel HFpEF paradigm recently proposed the induction of coronary microvascular dysfunction by HFpEF comorbidities via a systemic pro-inflammatory state. The consequent nitric oxide deficiency would increase diastolic tension and favor fibrosis/hypertrophy of adjacent myocardium, thus contributing to LV stiffening. Our derived hypothesis predicted decreased compliance in HFpEF of not only LV but also of the left atrium (LA).

To assess the impact of low-level inflammation on relations between LA/LV diameters and a noninvasive estimate of LV filling pressure (mitral E/E' ratio) in real-world HFpEF patients.

We retrospectively analyzed routine medical records of 60 clinically stable HFpEF patients in sinus rhythm (mean age: 70±8 years, 85% with hypertension) with assayed high-sensitive CRP. Subjects with CRP>10 mg/l or coexistent diseases, especially CAD, were excluded. LV mass index (LVMI), relative LV wall thickness (RWT) and mitral E/E' were derived from echocardiography records.

Patients with over-median CRP had higher RWT ( $p=0.01$ ) and mitral E/E' ( $p<0.001$ ). No intergroup differences were found in LA ( $p=0.08$ ) and LV ( $p=0.8$ ) diameters, while those in LVMI and NYHA class were of marginal significance ( $p=0.05$ ). Multivariate analysis showed independent positive effects of CRP and age on LA and LV stiffness ( $p<0.05$ ).

Chronic low-level inflammation may contribute to both LA and LV stiffening regardless of associated LV remodeling, which may additively exacerbate symptoms in HFpEF.

**Keywords:** HFpEF, DHF, LV LA stiffening, LV remodeling, NYHA, E/E', CRP

## **The dependence between impaired glucose metabolism and the frequency of hospitalizations due to decompensated heart failure in patients after acute myocardial infarction treated invasively**

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Different glucose abnormalities (GA) in patients after myocardial infarction (MI) have negative impact on survival but correlation between GA and major adverse cardiac events (MACE) is less convincing

To evaluate the influence of GA on the incidence of MACE especially on hospitalizations due to decompensated heart failure(DHF) in patients with MI treated invasively

Single-center, prospective study encompassed 665 patients with acute MI who were treated invasively. The population was divided into four groups with different GA: DM diagnosed before admission (pre-hospDM, n = 177) new onset diabetes (newDM, n = 95) impaired glucose tolerance (IGT n = 122) and impaired fasting glucose (IFG, n = 45). The control group consisted of normoglycemic patients (NGR, n = 226). The median follow-up was 31 months

The long-term observation revealed significantly higher mortality in the group pre-hospDM (20.9%) and the newDM (14.7%) compared to the NGR (5.3%;  $p < 0.05$ ). In the group of pre-hosp DM (6.2%), newDM (10.5%) and IGT (7.4%) a higher risk of hospitalization for DHF was observed in comparison to NGR (1.3%;  $p < 0.05$ ). In the group of IGT more patients experienced consecutive myocardial infarction in comparison to the control group (14.8% vs 8%,  $p < 0.05$ )

In patients with MI in both groups: pre-hospDM and newDM the risk of MACE in long-term observation is increased. Both forms of diabetes are associated with higher mortality and increased risk of hospitalization for DHF compared to patients without GA. Patients with IGT have a higher risk of hospitalization due to DHF which may result from higher incidence of reinfarction in this group.

**Keywords:** Major adverse cardiac events, myocardial infarction, diabetes mellitus, impaired glucose tolerance, percutaneous coronary intervention, decompensated heart failure

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF INVASIVE CARDIOLOGY AND CARDIOTHORACIC SURGERY**

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## Plaque redistribution after stenting - data from NIRS-IVUS

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The previous experiment established that higher plasma concentrations of several of lipid molecules are associated with higher lipid core burden index (LCBI) on NIRS imaging.

The present study aimed to characterize the plaque redistribution proximally and distally to implanted stent with relation to its composition and determine the relationship between LCBI and lipid plasma concentrations.

The combined near-infrared spectroscopy (NIRS) and intravascular ultrasound (IVUS) imaging analyzed the plaque distribution after the stent implantation in vivo. NIRS detected lipids in the lesion and IVUS presented the redistribution of the plaque. The maximal LCBI in a 4mm long segment was estimated by NIRS before and after the stent implantation, and IVUS estimated minimal lumen area (MLA), plaque burden (PB) and plaque volume pre and post implantation.

The median plaque volume pre and post implantation was 127.45 (74.5, 186.8) mm<sup>3</sup> vs. 99.35 (67.5, 171.5) mm<sup>3</sup> ( $P < 0.001$ ) with a median difference 19.25 (3.9, 72) mm<sup>3</sup>. The median LCBI<sub>4mm</sub> pre and post stent was 351 (157, 589) vs. 77 (3, 231) ( $p < 0.001$ ) in the treated lesions, and 34 (0, 207) vs. 0 (0, 45) ( $p < 0.04$ ) in segment 4mm long proximally to the stent. PB in 4mm proximally to the implanted stent increased from  $46.23 \pm 11.79$  to  $50.36 \pm 9.93$  post stenting ( $p = 0.02$ ). The results demonstrated that there was no correlation between LCBI in 4mm on the one hand and LDL level ( $p = 0.4112$ ) and TCH level ( $p = 0.9857$ ) on the other.

The stent implantation causes plaque shift proximally to the implanted stent. Plasma lipid concentrations do not correlate with composition of the plaque (LCBI).

**Keywords: NIRS, IVUS, lipid plasma level**

## **Subcutaneous implantable cardioverter-defibrillator implantation procedure and mid-term follow up after the implantation – preliminary experiences**

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The entirely subcutaneous implantable cardioverter-defibrillator (S-ICD) represents a new technology of implantable devices towards less-invasive but has not been well studied yet.

Retrospective assessment of safety and feasibility of S-ICD implantation and mid-term observation.

Data about S-ICD implantation performed between 2015 and 2017 were analyzed. Safety and feasibility of the procedure were assessed.

Between 2015 and 2017 S-ICD (Emblem, Boston Scientific) were implanted in 9 consecutive patients (pts) with a median age 54 years (range:18-83). In all patients qualified to the procedure device were implanted successfully. In 4 (55.5%) patients the device were implanted in the primary prevention. S-ICD was implanted de novo in 2 pts (22.2%), in the remaining 7 subjects (77.7%) ICD (n=6) or cardiac resynchronization therapy (n=1) devices were implanted previously and then explanted because of: prior device-related infective endocarditis (n=4), pocket infection (n=2) and right ventricle lead dysfunction (n=2). During the median follow up of 189 days 4 arrhythmias (3 ventricular tachycardia, 1 atrial fibrillation episode) occurred in 3 pts. There were 2 adequate device interventions. None inadequate intervention was observed. The electrode revision because of risk of subcutaneous erosion was the only complication. During the follow up 1 patient died and 1 had heart transplantation.

The S-ICD provides an alternative to transvenous ICD for the prevention of sudden cardiac death and may be used in some group of patients in whom transvenous system cannot be implanted. S-ICD implantation is a feasible and safe procedure

**Keywords: subcutaneous implantable cardioverter-defibrillator, sudden cardiac death**

## **Is there an alternative to the Amplatzer? Secundum atrial septal defect percutaneous closure with Amplatzer and Figulla Septal Occluders - comparison of results and peri-procedural observation.**

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Secundum Atrial Septal Defect (ASD II) is one of the most common congenital heart defect. Amplatzer Septal Occluder (ASO), introduced in 1997 and made of nitinol mesh, has become the method of choice in ASD II treatment. Recently, Figulla ASD Occluder (FSO) has been invented to close ASD II percutaneously. Despite being quite similar to ASO, FSO has some differences, like the release system.

To compare results and peri-procedural observations of ASD II transcatheter closure with ASO and FSO.

1328 patients (pts; 940f; 0,4-79y; median 16y) had ASD II percutaneously closed between 1997 and 2015 in our center. ASO was applied in 1081 pts (0,4-77y; median 13y) with mean diameter of the defect:  $12\pm 5,4$ mm (3-34mm) in transesophageal echocardiography (TEE). Since 2010, FSO has been introduced and it was used in 91 patients (3,4-79y; median 32y), with the size of the defect in the TEE:  $16\pm 6,9$ mm (6-40mm). We evaluated efficiency and peri-procedural complications of transcatheter closure of ASD II with ASO and FSO.

Procedure success rate of both devices proved to be very high: ASO – 96,5% and FSO – 96,7%. Few complications were observed in peri-procedural period: headache (67 pts), scotoma (21), embolization (9), transient left ventricular failure (4), pericardial effusion (3) and transient ischemic attack (2). No device fractures and thrombi were observed. No statistically significant ( $p<0,05$ ) differences were noticed between compared groups.

Results and peri-procedural observations of ASD II transcatheter closure with ASO and FSO are comparable. Both devices present high success rate and low number of complications.

**Keywords:** atrial septal defect, percutaneous closure, peri-procedural observation

## **The frequency of sternum wound infections in CABG patients with use bilateral internal thoracic arteries. Influence of obesity**

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Coronary Artery Bypass Grafting (CABG) is commonly used surgical procedure in patients with advanced coronary artery disease. The coronary vessels obstruction are bypassed usually by left internal thoracic artery (LITA) and great saphenous vein (SV). Used LITA and saphenous vein is considered to be gold standard in CABG, while use both internal thoracic arteries is rare due to greater fear of complications.

The purpose of research was to analysis frequency of sternum infection after taking two internal thoracic arteries to CABG and assessment it between patients with obesity and patients without obesity.

We performed a retrospective analysis of 272 patients undergoing CABG in Cardiac Surgery Clinic in Katowice. All patients underwent CABG with bilateral internal thoracic arteries and as needed saphenous vein. Complications associated with healing of sternotomy wound were analyzed and compared in two groups: group 1 included patients with features of the skin and subcutaneous tissue infection, while group 2 consisted of patients who had to undergo re-stitching of sternum due to wound infection.

Among all patients, features of skin and subcutaneous tissue infection was present in 16 patients (5,8 %), while re-stitching of sternum was necessary in 4 patients (1,5%). Among patients with obesity (24%) characteristics of infection were visible in 4 patients (6%) and re-stitching of the sternum was performed in 2 cases (3%). It is believed that internal thoracic artery is more durable vessel to CABG compared to saphenous vein. On the other hand use two internal thoracic arteries can cause more complications with sternum wound.

**Keywords: CABG, Internal thoracic artery, cardiac surgery, infection**

## The influence of bicuspid aortic valves on direct hemodynamic results after transcatheter aortic valve implantation (TAVI)

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Bicuspid aortic valve (BAV) is a congenital valvular disease, diagnosed in approximately 2% of the population. This anatomic abnormality is associated with higher risk of aortic stenosis. Adequate bicuspid valve sizing, deployment and functioning of the prosthesis remains a challenge in TAVI procedures.

The aim of this study is to assess the influence of BAV on direct hemodynamic results after TAVI.

This study concerns 118 TAVI procedures performed in the SCCS in Zabrze between November 2008 and February 2014. We selected 63 patients with CoreValve device and divided them in groups: I (BAV), II (tricuspid aortic valve TAV) based on the multi-slice computed tomography scans (MSCT). We assessed the post-operative paravalvular leak after valve implantation using the Sellers criteria, aortic regurgitation index (AR Index) and aortic valve area (AVA).

The BAV was recorded in 15 (23,8%) patients. PVL grade 0 according to Sellers criteria was in group I and II 40,0% vs 27,1% ( $p=0,338$ ), grade 1 – 33,0% vs 37,5% ( $p=0,752$ ), grade 2- 6,7% vs 27,1% ( $p=0,098$ ), grade 3 – 20,0% vs 8,3% ( $p=0,192$ ). PVL in group I and II was in grades 0-1 73,0% vs 65,0% ( $p=0,565$ ) and in grades  $\geq 2$  27,0% vs 35,0% ( $p=0,565$ ). AR Index in group I and II was  $29,4 \pm 11,2$  vs  $33,3 \pm 10,4$  ( $p=0,3035$ ) and AVA was  $1,94 \pm 0,73 \text{cm}^2$  vs  $2,08 \pm 0,83 \text{cm}^2$  ( $p=0,6342$ ).

The occurrence of BAV in patients undergoing TAVI has no influence on direct hemodynamic results.

**Keywords:** TAVI, bicuspid aortic valve, PVL, MSCT, AR Index

## The assessment of the clinical and echocardiographic parameters in patients with bicuspid aortic valve after transcatheter aortic valve implantation (TAVI)

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Bicuspid aortic valve (BAV) is a congenital valvular disease, that predisposes to complications, such as aortic stenosis and regurgitation. Anatomical differences between bicuspid and tricuspid (TAV) valves may lead to differences in clinical outcomes after TAVI.

The aim of this study is to assess the influence of bicuspid aortic valve on patients clinical outcomes after TAVI.

This study concerns 118 TAVI procedures, performed in SCCS in Zabrze between November 2008 and February 2014. We included 66 patients with CoreValve device and divided them in two groups: I (BAV), II (TAV) based on the multi-slice computed tomography scans. We compared the clinical effects after valve implantation and analyzed: 30-day and one year survival rate, the 6-minutes walk test, ejection fraction (EF), mean aortic valve gradient and aortic valve area (AVA).

The first group included 15 (22,7%) and the second 51 (77,3%) patients. The 30-day mortality was in group I 6,7% and group II 5,9% ( $p=0,9102$ ). The one year mortality rate in group I was 40,0% and 15,7% in group II ( $p=0,0429$ ). The post-operative 6-minutes walk test was in group I and II -  $262,7\pm 65,9m$  and  $315,7\pm 313,4m$  ( $p=0,662$ ). Echocardiographic parameters: EF: I  $49,0\pm 9,6\%$  vs II  $46,3\pm 11,1\%$ , mean aortic valve gradient: I -  $11,4\pm 7,3$  mmHg vs II -  $9,5\pm 5,0$  mmHg and AVA: group I -  $1,6\pm 0,6$  cm<sup>2</sup> vs II -  $1,7\pm 0,4$  cm<sup>2</sup> were statistically insignificant.

The existence of BAV in patients undergoing TAVI has impact on one year mortality.

**Keywords:** Bicuspid aortic valve, TAVI, mortality, MSCT

## Embolic complications in patients with left atrial myxoma

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Myxoma is the most common primary cardiac tumor which usually occurs in left atrium. Two morphological forms: smooth surface and a compact consistency (Type 1) or an irregular surface and a soft, fragile consistency (Type 2) are observed. This benign tumor has the potential to cause serious complications, including embolic events and obstruction of intracardiac blood flow. It is believed that the Type 1 tumor is more often the cause of embolism in patients with myxoma.

Evaluation of the appearance of embolic events in patients with left atrial myxomas.

We retrospectively reviewed the medical records of all 45 patients with cardiac myxoma who were urgently operated between 2012 and 2017. Patients were divided into two groups: Group A with embolism (10 patients, 22%) and Group B without embolism (35 patients, 78%).

There were no significant differences in age, vascular risk factors, the tumor size and mitral valve obturation in echocardiography between these groups. Embolic event was the first manifestation of the disease in 4 patients from first group. There were 29 patients with compact consistency form (Type 1) and 16 patients with soft consistency form (Type 2). Type 2 myxoma was more frequently found in the Group A (embolic) – 7 (70%) patients ( $p=0.03$ ). There were no operative deaths in any of the 45 patients studied.

Once echocardiographic diagnosis of myxoma type intracardiac tumor has been established, the treatment of choice is urgent surgical excision. Operation should be performed as soon as possible to avoid major complications such as brain or coronary vessel embolism especially in patients with the suspicion of fragile, soft morphological type of myxoma.

**Keywords:** atrial myxoma, benign cardiac tumor, embolic events, echocardiography

## Periprocedural bridging therapy with low molecule weight heparin in surgical valve replacement population

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Periprocedural antithrombotic management in patients who undergo surgical valve replacement (SVR) is uninvestigated. Although the safety and efficacy of subcutaneous low molecule weight heparin (LMWH) is unknown, it is an acceptable alternative to unfractionated heparin

We investigated the safety and efficacy of periprocedural LMWH prophylaxis in SVR population. Additionally, the impact of oral anticoagulation (OAC) was assessed.

The retrospective, single-center analysis was performed in 2015yr. Endpoints were: 1.Bleeding, 2.Reoperation, 3.Blood products transfusion, 4.Thromboembolic events. Risk factors were: 1.Periprocedural LMWH/OAC, 2.Time of LMWH/OAC cessation/initiation, 3.Dosage of LMWH/OAC (mg/day).

We included 200 SVR/SVR+CABG pts; age  $63,39 \pm 13,33$ yr; 86(43%) women. LMWH before/after SVR were used in 32(16%)/197(98.5%)pts. LMWH were ceased  $2,03 \pm 3,07$  days before SVR, and started in 148(74%)pts on SVR day, after the procedures. LMWH was not related with endpoints. Higher dose of LMWH premedication was correlated with bleeding ( $n=88$ ) ( $91,67 \pm 43,9$  vs.  $56,52 \pm 30,5$ ;  $p=0,01$ ), reoperation ( $n=16$ ) ( $160$  vs.  $65,8 \pm 36,02$ ;  $p=0,01$ ), PRBC ( $n=93$ ) ( $88,75 \pm 40,0$  vs.  $51,57 \pm 29,0$ ;  $p=0,003$ ), PLT ( $n=17$ ) ( $106,6 \pm 50,3$  vs.  $65 \pm 36,6$ ;  $p=0,07$ ), and FFP transfusion ( $n=77$ ) ( $85,45 \pm 40,0$  vs.  $60,83 \pm 36,58$ ;  $p=0,08$ ). First dose of LMWH on the day of SVR was relevant for FFP ( $43,43 \pm 8,83$  vs.  $40,5 \pm 7,46$ ;  $p=0,05$ ). Earlier beginning of OAC after SVR increased the risk of PRBC transfusion ( $2,0$  vs.  $3,0$  day;  $p=0,003$ )

Bridging with LMWH in SVR seems to be safe and effective. Adverse impact of LMWH might result from unsuitable dosage and day of its cessation/initiation.

**Keywords: SVR, LMWH, Antitrombotic, Management**



**Stroke after surgical valve replacement – risk factor**

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Stroke is a devastating complication and an independent predictor for in-hospital death after surgical valve replacement (SVR)

Our objective was to define risk factors for stroke related with SVR.

The retrospective, single-center analysis of risk factors for postprocedural stroke in SVR/SVR+CABG population from 2015 yr. Stroke was defined as persistent neurological deficits with ischemic/hemorrhagic origin confirmed in CT. Potential risk factors were: 1. Clinical characteristics, 2. Procedure type, 3. Procedure related variables: time of aorta clamping and extracorporeal circulation, arterial blood gasometry and coagulation parameters, unfractionated heparin, protamine, antifibrinolytics dosages, 4. Periprocedural antiplatelet/antithrombotic therapy.

In 200 pts (age 63,39±13,33yr; 86 women) 4(2%) strokes were noted. Positively related with stroke occurred to be: SVR+CABG procedure (100% vs. 25%; p=0,001), coronary artery disease (100% vs. 45,6%; p= 0,03), higher periprocedural PLT number (before SVR 321±92,3 vs. 210,4±74,2; p=0,003, on SVR day 232,2±105,1 vs. 144,5±60,1; p=0,005, 1st day after 280,5±179,4 vs. 160,3±55,8; p<0,001), clopidogrel before SVR (50%±0,57 vs. 10,3%±0,3; p=0,01), aspirin before SVR (100% vs. 44,3±0,49%; p=0,026) and its earlier cessation before SVR (8,5±0,34 vs. 2,76±3,21; p=0,01). Longer time on-pump (146,2±43,82 vs. 105±40,16; p=0,04), higher activated clotting time after UFH administration (670,33±254,28 vs. 512,5±111,65; p=0,02).

Concomitant coronary artery disease, higher number of PLT count, and preliminary cessation of antiplatelet therapy might have impact on stroke occurrence after SVR.

**Keywords:** Stroke, SVR, Risk factors,

## **Surgical treatment of patients with multi vessel coronary disease and total occlusion of right coronary artery**

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Chronic total occlusion (CTO) of coronary arteries is defined as exist of coronary arteries with absent anterograde blood flow for >12 weeks duration. Lack of necessity blood perfusion to the myocardium may result as ischaemia, presenting angina symptoms. According to the literature, in which intra- and postoperative outcomes were analyzed, it is presented how best to manage the need for revascularization and the preferred modality.

To evaluate and analyze 30-days outcomes of surgical revascularization multivessel coronary arteries disease with chronic total occlusion of RCA/RPD.

In a retrospective cohort study we enrolled and analyzed total of 156 consecutive patients, who were diagnosed with triple vessel coronary artery disease and underwent surgical revascularization between 1.01.2015 and 30.06.2015. Intraoperative data, baseline characteristic and early outcome were assessed.

Performing coronary artery bypass graft to the RCA/RPD were less if patient suffer from CTO and stood 40,3% CTO RCA/RPD, 81% non-CTO RCA/RPD, respectively. Clinically, there was no significant difference in the early mortality either from any cause (7% vs. 2%;  $p=0,14$ ; 95% CI [0,6-18]) or cardiac cause (3,5% vs. 2%;  $p=0,57$ ; 95% CI [0,25-11]). Additionally, not performing graft to RCA/RPD in CTO group, increased risk of major adverse cardiovascular events statically significant (15,7% vs. 4%;  $p=0,05$ ; CI 95% [1,2-12,0]).

Patients, who suffer from multivessel coronary disease with CTO RCA/RPD and underwent CABG have less frequently performed grafts to RCA/RPD. In addition, patients in this group have greater risk of major adverse cardiac events during postoperative period.

**Keywords:** CTO , RCA , revascularization , graft , coronary artery disease

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

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Nowadays, studies searching for biochemical markers with prognostic value of postoperative outcome in patients undergoing cardiac surgery are being conducted and the actuarial clinical value of numerous measurements is under investigation. Postoperative serum lactate levels have been proven to correlate with the hypoperfusion and oxygen deficiency in patients hospitalized in the Intensive Care Unit (ICU). Nevertheless, despite from a single-center study, the issue has not been discussed in the literature.

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

**Material and methods** In a retrospective analysis, we evaluated the data from the medical records of 46 consecutive patients who underwent HTX in the Department of Cardiovascular Surgery and Transplantology, John Paul II Hospital, Kraków. The serum lactate level measurements were obtained from arterial blood gas analysis that were conducted every 6 hours within first 48 hours (h) postoperatively.

**Results** The median serum lactate levels measured post-surgery valued: on admission to the ICU – 4.3 (2.3-6.4); 6 h – 6.6 (3.3-7.9); 12 h – 4.6 (3.7-7.6); 18 h – 3.8 (2.3-6.1); 24 h – 2.7 (1.9-3.9); 30 h – 2.3 (1.6-3.1); 36 h – 2.0 (1.6-2.5); 42 h – 1.8 (1.3-2.4); 48 h – 1.9 (1.3-2.3) mmol/l [normal range: 0.5-1.6 mmol/l]. The mean highest observed serum lactate level was  $6.6 \pm 2.5$  mmol/l. Death before discharge was observed in 6 (13%) cases.

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

**Keywords:** serum lactate, biochemical markers, HTX

## **Multivariate analysis of factors affecting post-ablation recurrence of ventricular tachycardia in patients undergoing implantable cardioverter-defibrillator or cardiac resynchronization therapy with defibrillator device and ischemic etiology of heart failure**

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Catheter ablation of ventricular tachycardia (VT) is invasive treatment with patients experiencing recurrent arrhythmias. However some data showed that recurrence rates of VT at 6 months post-ablation may be up to 50 %.

The aim of the study was to assess potential predictors of recurrence of VT in patients with ischemic etiology of heart failure (HF) treated with catheter ablation.

From among 178 patients who had VT ablation between 2004 and 2016, the group of 113 patients with ischemic HF, ICD or cardiac resynchronization therapy with defibrillator (CRT-D) was selected. The data about basic characteristic, procedural and follow-up was obtained retrospectively.

From among 113 analyzed patients 71,7% had ICD and 26,6% CRT-D, 87,6% were male, the median age was 66 years, and the median left ventricular ejection fraction was 26%. The acute successful of ablation reached 92.9%, the heart scar was observed in 83,2% of patients during ablation. During the median follow-up of 1091 days (25% percentile of 379 days , 75% percentile of 1995 days), in 26,6% of patients VT recurred. Correlation between VT recurrence and the use of Ic group of antiarrhythmic drugs (54,6% of patients treated with Ic drugs vs. 23,7%), type of implanted device (41,4% of patients with CRT-D vs 20,9% with ICD), and arterial hypertension (30,5% of patients with hypertension vs. 8,3% without hypertension) were observed.

The risk of VT recurrence after ablation in patients with ischemic HF reached almost 27% and is higher in patients with CRT-D, arterial hypertension and those treated with Ic group of antiarrhythmic drugs.

**Keywords: ventricular tachycardia, ablation, implantable cardioverter-defibrillator, cardiac resynchronization therapy**

## **Stop the heart to live – comparison of two types of cardioplegia used in adults' cardiac surgery**

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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 4:1 cardioplegia(CB).

Compare myocardial protection using DN cardioplegia as alternative for classic CB cardioplegia in adults' cardiac surgery.

The study comprised 1344 patients, who underwent coronary artery bypass grafting (CABG=806) or operation of heart valves (OHV=538; with CABG=189/without=349) between 1 January'16 and 31 December'16. 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(ACC) and cardiopulmonary bypass times(CPB). For calculation we used Mann-Whitney test.

In CABG between DN and CB group no significant differences were found between the presurgery troponin level, median age, EuroSCORE. ACC and CPB times were significantly longer in DN section:32(25-40)vs28(22-38)for ACC, 57(44-69)vs51(40-65) for CPB; $p<0,001$ . In OHV between DN and CB group was no significant difference between the presurgery troponin level. Median age, EuroSCORE were significantly higher, ACC and CPB times were significantly longer in DN:64(51-80)vs53(43-70) for ACC, 86(68-107)vs75(56-94)for CPB; $p<0,001$ . There was no significant difference between the postsurgery troponin level in both groups:CABG DN:0,25(0,17-0,4)vsCB:0,26(0,18-0,4);OHV:0,36(0,22-0,7)vs0,4(0,24-0,8).

Despite longer ACC and CPB times and higher EuroSCORE cardioplegia DN ensures similar myocardial protection to CB based on postsurgery troponin levels.

**Keywords: myocardial protection, cardioplegia, del Nido solution**

## **Factors affecting the recurrence of atrial fibrillation in patients after catheter ablation. Assessment of clinical symptoms according to EHRA score before and after intervention**

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Effectiveness of catheter ablation is not 100% but still it is respected therapeutic method of atrial fibrillation(AF).Therefore, proper selection of patients is important for this treatment.

The aim of the study was to evaluate the efficacy of first-time ablation treatment and factors affecting the recurrence analysis.

A study group consists of 102 patients with AF(67M;35W).Retrospectively examined the clinical data: age,sex,left atrial appendage morphology, left atrial diameter,left atrial appendage opening diameter,left atrial appendage magnitude,AF type(paroxysmal,persistent), comorbidities(HA,DM type 2,dyslipidemia),CHAD2-VASc score,type of ablation(RF,cryoablation) and previously electrical cardioversion on recurrence of AF.After 2,3+/- 1 year, the clinical data were collected based on an interview.As an improvement in clinical condition we recognized an improvement of EHRA score by at least one grade.

AF recurrence was observed in 48 patients(47%)—31M(65%) and 17W(35%), $p > 0,05$ .The only independent factor affecting recurrence of AF is left atrial diameter( $>4\text{cm}$ ),  $p < 0,001$ .There were no effect of other factors.Improvement in clinical condition after ablation was in 87 patients(85,3%), aggravation in 4(3,9%) and no changes before and after intervention in 11(10,8%).

Recurrences of AF after first-time catheter ablation appear in approximately half of patients. Catheter ablation beneficially affects on improvement in the clinical condition of majority of patients. In patients with enlarged diameter of left atrium the risk of recurrence of arrhythmia is increased when compared to other patients with normal diameter.

## **Left atrial appendage morphology assessment in selected population and affecting of left atrial appendage morphology on frequency of atrial fibrillation recurrence**

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Appendages are structures which belong to left and right atria. Patients with AF are endangered by embolic stroke. Thrombus forms definitely more often in left atrial appendage (LAA). We can divide its morphology using many classifications. THE

The aim of study was assessment of left atrial appendage morphology in selected population and its affecting of frequency of AF.

The retrospective study included a group of 112 patients (77M;35W) at the average age of  $61 \pm 10$ . Left atrial appendage morphology decay was assessed using Wang and Kimura classification based on CT ( chicken wing, cactus, windsock, cauliflower) Affecting LAA morphology of frequency AF recurrence was also assessed.

Cactus morphology in LAA was observed in 36 patients (32%) – 22 men (61%) and 14 women (39%), chicken wing in 33 patients (30%) – 24 men (73%) and 9 women (27%), cauliflower in 28 patients (25%) – 23 men (82%) and 5 women (18%) and windsock in 15 patients (13%) – 8 men (53%) and 7 women (47%),  $p > 0,05$ . AF recurrence was observed in 51 patients (46%) – 34 men (67%) and 17 women ( 33%).

Cactus left atrial appendage morphology was the most frequent and windsock morphology was the rarest. We can not exclude that LAA morphology has influence of atrial fibrillation recurrence.

## **Risk factors for heart failure hospitalization in patients with congestive heart failure after RV pacing to CRT upgrade procedure**

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The upgrade from a right ventricular (RV) pacing to cardiac resynchronization therapy (CRT) improves left ventricular (LV) systolic performance and decreases heart failure (HF) hospital admission. Patient outcomes depends on HF aetiology, comorbidities, and initial LV status.

The aim of this study is evaluation of heart failure hospitalization predictors in patients after upgrading procedure.

The sixty HF patients, hospitalized within 3 years after upgrading procedure in the Department of Electrocardiology, University Hospital No 7, Katowice, Poland, were assessed, retrospectively. Dependent variables: hospital admission due to HF. Independent variables: age, sex, end-systolic LV diameter (ESD), end-diastolic LV diameter (EDD), LV ejection fraction (LVEF), mitral regurgitation (MR), echocardiographic improvement, initial functional NYHA Class, HF aetiology, concomitant atrial arrhythmias, QRS complex morphology. Statistical analysis was done using MedCalc, Belgium 16.8.4.

The relationship between initial LV size and the hospitalization risk was found (for EDD,  $p=0,035$ ; OR 1;08 and for ESD,  $p=0,0595$ ; OR 1;06). Additionally, higher ratio of HF hospitalization among patients manifested higher initial NYHA Class was presented ( $p=0,0460$ ).

Initial LV size and NYHA Class were found as significant factors that increase the risk of hospitalization because of circulatory insufficiency within 3 years after the upgrading procedure.

**Keywords cardiac resynchronization therapy, heart failure, up-grade**



## **The impact of coronary artery disease management on the prognosis for patients with systolic heart failure**

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Heart failure (HF) is the major cause of death in cardiovascular disease. Coronary artery bypass grafting (CABG) remains the only treatment, verified by clinical trials for coronary artery disease (CAD). In clinical practice relevance of percutaneous revascularization (PCI) increases, medical treatment (OMT) is also essential. However, data on patients prognosis depending on chosen treatment is quite limited.

Analysis of association between elected method of treatment and prognosis in patients with systolic heart failure.

Analysis comprises demographic data, clinical profiles, methods and results of treatment in patients with ischemic etiology. Acute coronary syndrome was excluded. 2730 patients with systolic HF hospitalized in the 3rd Department of Cardiology, SMDZ in 2009-2015. Finally, 1703 patients were analyzed.

Patients clinical profile: average age 64.8 y., NYHA class III and IV (51,8%), mean ejection fraction (EF) 26.3%. Patients had many comorbidities i.e. hypertension (60.8%), diabetes melitus (46.0%), anemia (40.1%). Among the patients diagnosed with coronary angiography 11.5% were qualified for CABG, 23% had conservative treatment and the majority (60.2%) underwent PCI. The 12-month mortality in the study population was 12.7%. Mortality in patients treated with PCI or CABG was not significantly different (10.4%) and was statistically significantly lower than those treated conservatively (18.9%;  $p < 0.01$ ).

Analysis of 12-month mortality indicates no statistically significant difference between patients who underwent PCI or CABG, however it is essentially higher in patients treated only medically (OMT).

**Keywords: PCI, CABG, heart failure, mortality, CAD**

## **Assesment of leadless pacemaker Micra (Medtronic) implantation procedure – preliminary experiences**

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Beata Średniawa

Leadless pacemaker seems to be an alternative to the classical single chamber pacemakers. This is a promising methodology for a safer procedure, with fewer early and late complications.

Prospective assesment of safety and feasibility of leadless pacemaker implantation procedure.

Data about the leadless pacemaker implantation procedure (indications, periprocedural and postprocedural data) from consecutive 18 patients have been analyzed. Safety and feasibility of the procedure were assessed.

Between 2016 and February 2017 leadless pacemaker Micra (Medtronic, USA) were implanted in 18 patients. The indications for the implantation were: in 72% (n=13) subjects the atrial fibrillation with slow ventricular response, in 17% (n=3) paroxysmal atrio-ventricular block II° or III° block in one patient (5,5%) cardiodepressive syncopes, and in one (5,5%) asystolia and sudden cardiac arrest in anamnesis. The implantation was successful in all patients. Periprocedural complications ocurred in 2 (11%) patients: aneurysm of right femoral artery with arterio-venous fistula in one and pericardial effusion without clinical symptoms and signs in second one. The mean time of procedure was 90 minutes (range: 50-115), and fluoroscopy – 320 seconds (120-1320). In 67% cases (n=12) the device was located in the right ventricle apex, and in the remaining 33% (n=6) on the intraventricular septum. In the early observation period the stimulation parameters were stable.

The implantation of leadless pacemaker Micra is safe, the risk of clinically significant complications seems to be low.

**Keywords: cardiology, pacemaker, micra, leadless**

## **The impact of sternal closure technique on thorax pain severity and the rate of recovery post cardiac surgery**

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Despite of rapidly growing minimally invasive cardiac surgery, median sternotomy still remains the most popular surgical access. As a part of the operation it has an impact on comfort and quality of life during the postoperative period. Moreover, there is a limited number of data available about the relation between suture technique and patient's well-being.

The aim of the study was to assess the impact of sternal closure technique on thorax pain severity and the rate of recovery post cardiac surgery.

This study was conducted using a dedicated questionnaire distributed to 68 patients (50 M, 18 W, average age 66,8 years) post cardiac surgery (CABG, OPCAB, AVR). The questionnaire included specific questions regarding pain recovery, analgetic treatment, sternal instability and dehiscence, and progress of postoperative rehabilitation. Patients were divided into 3 groups according to the technique of sternal closure: single suture (grA), figure-eight suture (grB) and mixed type (grC). Types of suture technique were determined on the basis of the post operative chest X-ray.

There were no significant differences of pain level sensation between groups as measured 7, 14, 30 days post surgery (GrA vs GrB vs GrC;  $3,0 \pm 2,6$  vs  $3,6 \pm 2,5$  vs  $3,6 \pm 2,4$ ;  $1,2 \pm 1,6$  vs  $2,8 \pm 2,2$  vs  $2,9 \pm 2,2$ ;  $0,8 \pm 1,4$  vs  $1,7 \pm 1,8$  vs  $1,7 \pm 1,9$  p=NS, respectively). The ability to lift a chest without support occurred after  $18,2 \pm 10,1$  days in GrA;  $23,7 \pm 16,8$  in GrB and  $19,7 \pm 9,9$  in GrC (p=NS). Only 1 patient in a whole group experienced a sternal dehiscence.

We found no relation between sternal closure technique and degree of pain sensation as well as a rate of postoperative recovery.

INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



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

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## **Short term effects of duodeno-jejunal omega switch on glucose tolerance in the group of Sprague-Dawley rats in regard with type of diet before and after surgery**

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The improvement in glycemic control after bariatric surgery often occurs within days of the surgery, before any significant weight loss. This points to a role for weight loss independent. Mechanisms related to the changes in gastrointestinal anatomy and transit of nutrients. Although there is no investigation on role of the diet in that effect.

The aim of this study was to assess the short-term effect of DJOS surgery on oral glucose tolerance test (OGTT) in rats maintained on an obesogenic diet.

Rats were assigned to the control diet CD (n = 28) and high fat diet HFD groups (n = 28). After 8 weeks, both groups underwent SHAM (n=14) and DJOS (n = 14) surgery. All rats were then randomly divided into HFD and control diet (CD) fed group. Glucose tolerance, food intake and body weight were measured and compared with the control group.

No changes between the two operation types were observed for groups HFD/HFD ( $p = 0,499$ ), HF/CD ( $p = 0,073$ ), and CD/HF ( $p = 0,252$ ). A statistically significant difference in time profile course in the group CD/CD was observed ( $p < 0,01$ ). In SHAM type operations, no statistically significant differences in time profile course were observed. In the DJOS type operation, differences were observed between group HFD/HFD and CD/CD ( $p < 0,05$ ), HF/CD and CD/CD ( $p < 0,001$ ), CD/CD and CD/HF ( $p < 0,01$ ). The highest glucose tolerance was observed for the CD/CD and HFD/HFD groups, while a change of diet (HD/CD, or CD/HD) resulted in disabled glucose tolerance

Changes of almost all analyzed parameters were observed in the CD/HF groups following either DJOS or SHAM surgery. It suggests that a change of diet, irrespective of surgery, crucially affects glucose tolerance. Animals which underwent DJOS surgery showed improved glucose tolerance for HFD/HFD and CD/CD.

**Keywords: duodeno-jejunal omega switch, glucose tolerance**

## **Influence of bee pollen, whey proteins and running on mass and size of kidney, adrenal glands, heart, liver and brain of Wistar rats**

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Supplementation is popular among physically active young people. Bee pollen is a rich source of vitamins, micro- and macroelements as well as proteins. Therefore, it could be potentially a good supplement for physically active people.

To assess the influence of bee pollen supplementation on structure of rats' organs.

30 Wistar rats were divided into 6 groups: control, running control and 4 experimental (running + bee pollen-supplemented; bee-pollen-supplemented; running + whey-protein-supplemented; whey-protein-supplemented). During 8 weeks of study rats were given food and water as well as supplements in experimental groups ad libitum. 3 groups of rats were running 5 minutes every day. After 8 weeks rats were decapitated and their organs were harvested, measured and weighted.

Left ventricle's wall thickness was highest in both non-running supplemented groups ( $p=0.0221$ ). The mass of liver differed significantly with the highest mean value in whey protein-supplemented non-running group. The mass of heart was approx. 20% lower in running whey-protein-supplemented group ( $p=0.000752$ ). Kidney mass was highest in non-running whey-protein-supplemented group while lowest in running whey-protein-supplemented group ( $p=0.000011$ ). No statistically significant difference was observed in mass of brain and adrenal glands and in the thickness of right heart ventricle.

Both bee pollen and whey proteins tends to be good supplementation of proteins, changes observed in whey-protein supplemented running groups suggest significant influence on structure of various organs which may cause function changes.

**Keywords:** bee pollen, supplementation, Wistar rats



## **The influence of pro and antioxidant system on sperm mobility in physiological semen**

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A lot of epidemiological research indicates a growing problem of infertility connected with exacerbating morphology of semen. Many publications show the impact of reactive oxygen species (ROS) on the infertility. ROS, generated in biochemical processes, cause lipid peroxidation. The product of this process is called a malondialdehyde (MDA). A properly functioning system of antioxidants is necessary for ROS neutralization.

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

Semen samples were collected from 107 men of an average age of 33 with no sperm pathology. Based on the percentage of motile spermatozoa, the study subjects were divided into two groups: group 1 (n=56) 44-57% and group 2 (n=51) 58-89% of motile sperm. Evaluation of protein and MDA concentration-(Ohkawa method), superoxide dismutase (SOD) activity- (Oyanagui method), glutathione S-transferase (GST)- (Habig method), glutathione reductase (GR)-based on changes in the concentration of reduced NADPH2 and glucose-6-phosphate dehydrogenase (G6PD)-(Richterich method) were performed in seminal plasma. Additionally, the analysis included SOD and MDA in sperm lysate.

Statistical analysis showed that in the group of higher sperm motility, the activity of G6PD was significantly higher, whereas the MDA concentration was significantly lower, if compared with the second group.

On the basis of the results, it can be stated that the higher oxidative stress intensity, represented as MDA concentration, decreases the motility of sperm. The antioxidative activity of G6PD turned out to be a protective factor against low sperm motility.

**Keywords: sperm mobility, malondialdehyde, glucose-6-phosphate dehydrogenase**

## **The influence of dichloroacetic acid (DCA), amygdaline or butyric acid on viability, intensity of division, apoptosis and morphology of nuclei of glioma multiforme cells**

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Although glioblastoma multiforme (GBM) is one of the best molecularly characterised human tumours, the length of patients' survival has not changed significantly in recent years. It is known that the mutations diagnosed in glioma tissues are conjugated with an unique cellular metabolism (Warburg effect) that generates mitochondrial ultrastructure malfunctions, dysfunctions in programme cells death and in effect supports the cancer progression. The newest data indicate that cellular metabolism may represent a new target of anti-glioma therapy that is non-toxic for normal human astrocytes (NHA).

The aim of our study was an evaluation of the influence of three substances: dichloroacetic acid (DCA), amygdaline and butyric acid (BA) on glioma cell viability, apoptosis and nuclear morphology (immunofluorescence analysis).

Studies were conducted on a human GBM cell line (T98G) and Normal Human Astrocytes. When cell cultures reached confluence, culture medium was supplemented with DCA (10mM, 20mM), amygdaline (5mM, 10mM) or BA (0,25mM; 2,5mM; 5 mM). Cell line that were cultured in 2.5% oxygen and in the standard laboratory conditions. Then, biochemical and microscopic analyzes were carried out.

Under hypoxia (2.5% oxygen) conditions all of the examined substances induced destructive changes in images of the GBM's cellular nuclei. Moreover, DCA and BA decreased significantly the percentage of the proliferating cells and increased the percentage of apoptotic cells. These changes were not observed in the NHA.

The presented results suggest that application of DCA, or BA may improve the effect of standard treatment used in patients with GBM.

**Keywords: glioblastoma multiforme. dichloroacetic acid, amygdaline, butyric acid**

## **Application of imaging methods in identification of morphometric parameters of hair growth**

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Each hair undergoes three phases of growth: anagen - a phase of full activity, catagen - involution and telogen - rest. These cycles follow rhythmically. Hair growth on the hairy scalp is influenced by many exogenous and endogenous factors such as age, diet, care and ambient temperature. Within 24 hours the hair grows on average by 0.35mm.

The study included detailed analysis of imaging methods: ultrasonography, clinical photography and microscopic examination to determine the growth rate, density and thickness of hair.

12 volunteers applied topically, twice a day, stimulating hair growth. Volunteers rubbed the preparation on shaved scalp fragment for 7 weeks. Hair extracted from the site of the test product was analyzed and compared to the hair collected from the placebo. The examined hair and scalp were subjected to imaging studies.

High frequency ultrasonography (33MHz) was used for the analysis of the scalp and hair follicles. Clinical photography allowed the acquisition of high-resolution images in the light of cross-polarized region of interest (ROI), which was further analyzed using image analysis and processing methods. Microscopic examinations allowed for the evaluation of hair microstructure and analysis of hair follicles - identification of the growth phase. For testing, the hair was pulled with tweezers and then fixed with glutaraldehyde.

Microscopic examination allows to determine the growth phase of the hair and its thickness. The best way to assess your hair density is to use a clinical photograph. An ultrasound scan is good for watching hair follicles.

**Keywords: hair, hair growth, imaging methods, USG**

## Comparison of different culture media to facilitate sporulation of *Clostridium perfringens*

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*Clostridium perfringens* is a Gram-positive bacillus, producing variety of toxins, including enterotoxin, which is produced during the sporulation. *C. perfringens* is widespread in the environment and is causative agent of diseases, including diarrhea, cellulitis, necrotizing enterocolitis and others. *C. perfringens* strains require special culture media to facilitate sporulation.

The aim of the study was to assess the effectiveness of various culture media to facilitate sporulation of *C. perfringens* ATCC 13124 strain.

*C. perfringens* ATCC 13124 frozen at -80°C was cultured on Columbia agar with 5% sheep blood for 24 h at 37°C anaerobically. Subsequently, a few colonies were recultured in BHI broth, enriched with 1% horse serum and in Ellner medium at 37°C for 72 h in anaerobic conditions, following by incubation at room temperature for next 72h. *Clostridium difficile* strain was used as a control. After 72h alcohol shock (96% ethanol, 1:1) was performed with both cultures for 30, 60 and 90 min. At the end of each incubation time, presence of alive bacteria and spores was controlled by Gram and Schaeffer–Fulton staining.

In each control *C. difficile* culture (30, 60 and 90 min) as well as in *C. perfringens* cultures presence of spores was noted. Dependence between time of alcohol shock exposure and presence of spores was not observed. Cultures in Ellner medium demonstrated more frequent sporulation.

Although BHI broth with 1% horse serum provides excellent growth conditions for *C. perfringens*, Ellner medium more effectively facilitated sporulation of *C. perfringens*.

**Keywords:** *Clostridium perfringens*, sporulation, culture media

## Evaluation of bacteria's antibiotic-resistance in the wounds of the lower limbs of homeless patients – preliminary report

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In group of homeless patients the wounds are often critically neglected, and improperly healed due to poor patient compliance and usually too early termination of the therapy, which may result in antibiotic resistance and treatment failure.

The purpose of this study was to identify the bacterial strains in lower limbs wounds of homeless patients and to evaluate their antibiotic resistance.

The swabs were collected from the lower limb wounds of 30 homeless patients. Species identification was carried out with commercial biochemical tests. Susceptibility to antibiotics was determined in accordance with the recommendations of European Committee on Antimicrobial Susceptibility Testing guidelines.

The study involved 82 bacterial strains revealing different types of drug resistance phenotypes. *Staphylococcus* spp. strains (46.9%, n=15) were resistant to macrolides, lincosamides, and streptogramin B, (34.4 %, n=11), methicillin and ofloxacin (25%, n=8). In *Streptococcus* spp. a sole *S. agalactiae* isolate was resistant to macrolides, lincosamides, and streptogramin B (5.6%, n=1). Among the Enterobacteriaceae species a sole strain of *Proteus* spp. expressed the extended-spectrum beta-lactamases phenotype (5.3%, n=1). Also, all strains of *Pseudomonas* spp. were resistant to tested antimicrobials, with one metallo- $\beta$ -lactamases phenotype (25%, n=1).

The antibiotic resistance in study reveals the need to set the detailed protocols for empiric antimicrobial treatment of patients with lower socioeconomic status.

**Keywords:** microbiology, wounds, homeless, bacteria, drug resistance, antibiotic

## Measuring cortisol in serum, saliva and urine - are our assays precise enough?

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Widely used assessment of cortisol levels in the patient's blood sample is focused on the free cortisol in a whole blood. Conducting indispensable analyses from saliva may be considered as alternative method to usage of the blood at least in some of measurements.

The aim of our study is to verify the correlation between cortisol levels obtained through salivary and blood methods and compare these outcomes with urinary cortisol levels. We decided to additionally investigate connections involving personality and social stress levels.

The study included 55 people aged  $23.82 \pm 1.2$ , with no history of endocrine disorders. We have measured Blood, Salivary and Urinary cortisol. Saliva samples were gathered before and after taking blood and all of the samples were assembled between 7:30 and 8 AM. Our study subjects performed also 24-hour urine collection in order to assay cortisol level. Moreover, participants filled in Moringness-Eveningness Questionnaire, Leibowitz inventory, Ten Item Personality Inventory and author's questionnaire.

The mean results of Blood, Salivary and Urinary cortisol levels were  $658.86 \pm 249.31$  nmol/L,  $25.53 \pm 13.67$  nmol/L and  $186.89 \pm 123.8$  nmol/L respectively. There was no correlation between salivary and blood cortisol levels ( $p > 0.05$ ). Comparing to 24-hour urine collection, the accuracy of salivary assay was 94%, while serum accuracy stands at 47%.

Due to stress elicited by acquiring blood for examination, blood cortisol can be overestimated. Salivary test seems to provide accurate indication of stress hormone level. Additionally, the assessment of individual chronotype might be useful for evaluation of cortisol level.

**Keywords:** cortisol, saliva, blood, urine

## Glucagon-like-peptide-1 receptor expression in ovarian cancer cells

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Numerous scientific reports, supported by meta-analysis, suggest an association between diabetes (hyperglycaemia), and different types of cancer. Furthermore, patients manifesting both diseases have associated worse prognosis, higher mortality and shorter relapse-free survival. In clinical setting, incretin-mimetic drugs such as Exendin-4 (Ex-4) are used for the treatment of diabetes. The mechanism of action of incretin mimetic drugs is through the binding to incretin receptors (GLP-1R) present on various types of cells, which are reported to be expressed not only in pancreatic beta cells, but also in some cancer cells. Although the role of incretin drugs on cancer cell growth, and invasion both in vitro and in vivo is yet to be elucidated, several studies suggest, that incretin mimetic drugs inhibit growth and enhance apoptosis of ovarian cancer cells. Consequently, GLP-1 analogs used in the treatment of diabetes are currently being tested as novel anti-cancer drugs.

Our project aims to evaluate the protein levels of GLP-1R in several cancer cell lines prior further in vitro experiments with incretin analogues.

Thus, western blot analysis was performed to compare GLP-1R protein levels in already established ovarian cancer cell lines, such as SKOV-3 and CAOV-3, with the GLP-1R protein levels from biopsies obtained in our outpatient clinic.

Furthermore, ovarian cancer cell lines were also stimulated with Ex-4 and control molecules in order to evaluate potential modulatory effects in the level of the receptor upon stimulation.

Our data shows that GLP-1R is present in all the biopsies analyzed and similar levels of expression were observed when stimulated with Ex-4

**Keywords: Exendin-4; Diabetes, Cancer, Incretin**

## **The influence of a short-term exposure to lead on the selected parameters associated with oxidative stress in the myocardium and lung of rats**

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Lead is persistent in the environment and accumulates in soft tissues of exposed subjects. Therefore, it causes negative health effects. Symptoms and signs of plumbism can be considered as relatively well-known, while mechanisms responsible for their occurrence are poorly understood.

The aim of the study was to evaluate the influence of a short-term exposure to lead on the selected parameters associated with oxidative stress in the myocardium and lung of rats.

The research involved 20 male 6-week old Wistar rats. 10 animals (control group) were administered distilled water for 7 days, while the remaining 10 (exposed group) were administered solution of lead acetate at a concentration of 1200 ppm. On the eighth day, animals were decapitated by guillotine for obtaining tissues. In homogenates of cardiac muscle and lung, the following biochemical parameters were determined: the concentration of malondialdehyde (MDA) and the activities of catalase (CAT), glutathione reductase (GR), glutathione peroxidase (GPx), glutathione transferase (GST), and superoxide dismutase (SOD), including its isoenzymes (CuZn-SOD and Mn-SOD).

The concentrations of MDA in myocardium and lung of lead-exposed rats were significantly higher than in the control group by 25% and 52%, respectively. Similarly, the CAT activities were higher by 63% and 98%. Additionally, the activities of GR and GPx in lung of lead exposed-rats were higher than in the controls by 45% and 57%.

A short-term lead-exposure results in increased oxidative stress in myocardium and lung of rats despite adaptively increased activities of antioxidant enzymes.

**Keywords: lead, oxidative stress**



## The correlation between the concentration of sperm and semen's correct antioxidant system

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Impair the metabolism of the sperm and the participation of ROS synthesized during spermatogenesis are mentioned among the factors of male infertility. An imbalance between the ROS and the protection of antioxidant system(AS) causes oxidative stress. Accumulation of ROS has negative impact on sperm cell membranes through oxidation of polyunsaturated fatty acids and accumulation of malondialdehyde(MDA). Superoxide dismutase(SOD), catalase(CAT), reductase(GR) and glutathione peroxidase(GPx) were found in semen as enzymatic agents of AS.

The aim was to determine a correlation between the concentration of sperm and the activity of AS and lipid peroxidation process.

The material was the semen with correct analysis, collected from 107 man, average age 33, subjected to routine semen analysis (according to WHO standards). Sperms were collected from centrifuged sediment of semen and made lysate 1:10 with bi-distilled water. Created two groups due to concentration of sperm: 1(n = 54) 16.4-59.2m/ml, 2(n = 53) 59.3-306 m/ml. In seminal plasma SOD activity was measured using Oyanagui's method, GST by Habig's kinetic method, GR as changes in concentration of reduced NADPH<sub>2</sub>, concentration of MDA by Ohkawy's method and protein. Activity of SOD was measured in the lysate.

Analysis revealed statistically significant increase in SOD activity( $p = 0.023$ ) and isoenzyme MnSOD( $p = 0.033$ ) in semen from the lysate between two groups.

Lower SOD activity and its isoenzyme MnSOD in sperm is associated with a lower concentration of sperms in semen. Factors activating SOD in sperm may be beneficial for improving the quality of semen.

**Keywords: Malondialdehyde, Sperm, Semen, Antioxidant system**

## **Comparison of interobserver agreement between laboratory staff and students while using Hay-Ison's Criteria, Spiegel's Criteria or Nugent Scoring System to diagnose Bacterial Vaginosis**

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Bacterial vaginosis (BV) is manifested mainly by vaginal discharge and is defined as an imbalance of the bacteria that are normally present in the vagina.

The aim of this study was to answer to question: if students without previous experience can properly diagnose BV after one-hour training.

Vaginal smears were collected from 50 women of childbearing age with vaginal discharge without cervicitis and antibiotic therapy. Classification of the vaginal microbiota by Hay's, Spiegel's or Nugent Criteria was performed by laboratory staff and students. RESULTS Sensitivity of estimation of vaginal flora state in Nugent Criteria varied between 33% and 89%, while specificity varied between 95% and 100%. Sensitivity of estimation of vaginal flora state in Hay's and Spiegel's Criteria oscillated between 67% and 89%, while specificity between 76% and 100%. Nugent score obtained by students was compared to recorded by laboratory staff with interobserver agreement at 78%, 71% and 100% in BV, intermediate vaginal microbiota state and normal vaginal microbiota state, respectively. Inter-observer agreement between students was 22% in BV diagnosis, 57% in intermediate state results and 53% in normal vaginal microbiota results while using Nugent Criteria.

Estimation of interobserver agreement between students after one-hour training and qualified laboratory staff and also interobserver agreement between students themselves shows that Nugent Criteria, especially intermediate state causes more difficulties in learning and using than Hay's or Spiegel's Criteria.

**Keywords: Hay Ison, Nugent, Spiegel, Bacterial Vaginosis, BV**

## The anti-inflammatory and anti-oxidative effects of metformin and exenatide in human macrophages in *in-vitro* cultures

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Metformin and exenatide are drugs used in diabetes treatment. Their use results also in a decreased number of cardiovascular events. It might be due to their pleiotropic effect associated with the impact on human macrophages as well as their signaling pathways associated with inflammatory response. Macrophages role in atherosclerosis development is vital.

We decided to investigate the effects of exenatide and metformin on cytokines associated inflammation (TNF-alpha), chemotaxis (MCP-1) and reactive oxygen species (ROS) in macrophages.

We have taken the blood from volunteers and extracted peripheral blood monocyte cells. The cells were incubated, which enabled transformation of monocytes into macrophages. We have added metformin, exenatide and LPS according to the description of the experiment.

We have found out that both drugs reduced levels of TNF-alpha, MCP-1 and ROS, and the simultaneous use of drugs had little effect of synergy. Exenatide was more effective in reducing MCP-1, ROS and TNF-alpha than metformin. Another observation is that Compound C and PK14-22 have shown negative impact to the effect exerted by metformin and exenatide, more significant for the compound C.

The study showed that in a culture of human macrophages both metformin and exenatide inhibited inflammation and oxidative stress by reducing the concentration of MCP-1, TNF-alpha and ROS. Drugs used simultaneously showed features of synergy. Further research to explain intracellular mechanism behind observed phenomena are needed.

**Keywords: Metformin, Exenatide, Inflammation, Atherosclerosis, Macrophages, TNF-alpha, MCP-1, ROS**

## Effect of calorie-restricted diet on the endocrine function of adipose tissue

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Adipose tissue (AT) is an important endocrine organ. AT secretes numerous cytokines, called adipokines, including: leptin, adiponectin, omentin-1, resistin, and ghrelin. Leptin is produced by adipose cells and takes part in energy balance regulation by inhibiting hunger. It antagonises ghrelin – a peptide hormone, which plays a role of neuropeptide in the central nervous system. Besides regulating appetite, ghrelin strongly impacts distribution and rate of energy used. Adiponectin controls glucose levels as well as fatty acid breakdown. Omentin-1 enhances insulin-stimulated glucose uptake in adipocytes and is considered to be a link between obesity and type 2 diabetes.

The aim was to determine the diet influence on the endocrine function of AT.

The study included 10 patients (5 females and 5 males). The blood samples were collected at baseline and after 30 days of calorie-restricted diet (1000 calories per day for women and 1,200 calories for men). Plasma concentrations of adiponectin, leptin, resistin, omentin-1 and ghrelin were examined using enzyme immunoassays. Anthropometric measurements (weight, height and BMI) were additionally performed.

A weight loss of 4% and BMI decrease of 4% were observed in respondent group after 30 days of diet. Additionally, the decreases of leptin (12%) and ghrelin (25%) levels and the increases of omentin-1 (9%) and adiponectin (15%) levels were reported. The level of resistin showed no statistically significant changes.

Diet and weight loss improved the endocrine function of AT – the levels of beneficial adipokines were increased and those associated with the adverse effects of obesity were decreased.

**Keywords:** Adipokines, Adipose tissue, Endocrinology, Obesity

## **Influence of bisphenol A (BPA) on the nitric dioxide production (NO) in neutrophils isolated from women and men**

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Neutrophils play a key role in innate immune response. The increase of NO concentration can be caused by LPS stimulation via enhanced iNOS expression. The activity of neutrophils can be modified by prevalent found in environment xenobiotics. Special attention is focused on the xenoestrogens such as bisphenol A. It seems that the BPA effects can be altered in relation of gender, fat tissue amount and phase of menstruation cycle. Immune system function can be modulated via BPA estrogen activity. Despite many papers related this xenoestrogen, the effects on the neutrophils is still unclear.

Evaluation of BPA impact on the NO production and iNOS expression in human neutrophils.

Research materials were neutrophils isolated from peripheral venous blood collected to heparin. During 20 hours incubation cells were exposed to BPA and/or LPS. NO concentration was evaluated with Griess reaction. Expression of iNOS was measured by Western Blot.

We found that BPA enhances NO production by human PMNs with the participation of iNOS, but only in particular range of concentrations. Moreover, we observed that women neutrophils released higher amounts of NO in comparison to men cells exposed to low doses of BPA. Similar direction of changes were noted in case of LPS stimulation.

Neutrophils isolated from women are more susceptible on BPA, what is revealed in increase of NO production during BPA exposure. Bisphenol A can modified NO production in participation of iNOS in relation of dose in neutrophils exposed to LPS.

**Keywords: BPA, NO, immune response, neutrophils**

## **Determination drug susceptibility Clostridium difficile in clinical strains by E-test method**

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Infections caused by Clostridium difficile (CDI, Clostridium difficile Infection) constitute serious health and epidemical problem, mainly in hospital environment in patients after antibiotic therapy. C. difficile cause broad-spectrum infections from mild diarrhea to severe forms like pseudomembranous colitis or toxic megacolon.

The aim of this study was to determine antibiotic susceptibility of C. difficile strains cultured from stools of hospitalized patients being suspected of CDI.

The materials for the study were 30 C. difficile strains cultured from stool samples derived from patients with diarrhea. Antibiotic susceptibility was tested using E-tests which determine MIC value to 11 antibiotics. For the examined C. difficile strains, there was no resistance to: metronidazole, vancomycin, amoxicillin with clavulanic acid and piperacilin with tazobactam. Some strains exhibited resistance to moxifloxacin (63,3%), clindamicin (60%), rifampicin (50%), benzylpenicilin (43,3%) and imipenem (40%). 12 strains (40%) exhibited similar resistance to clindamicin, moxifloxacin and rifampicin – MDR (Multi-Drug-Resistant).

In conclusion frequent occurrence C. difficile strains, exhibited resistance at least to 3 antibiotics (MDR) was observed.

**Keywords: Clostridium difficile, drug susceptibility, antibiotic-associated diarrhea**

## **The influence of NAP and estrogens on spinal cord regeneration after its injury - on example of Wistar C rats after ovariectomy**

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The spinal cord injury is especially affecting young men, mainly due to traffic accidents. Many substances, concerned to have neuroprotective and neuroregenerative properties, have already been discovered. One of them is an amino peptide - NAP. Neuroprotecting and antiapoptotic properties have also estrogens.

The aim of our study was to assess the influence of NAP and estrogens on motor functions regaining after spinal cord injury.

In order to obtain reliable results the gait parameters were measured by CatWalk XT device. The effectiveness of this method in the evaluation of movement dysfunction of animals was confirmed in many studies. The Wistar C rats females underwent ovariectomy procedure. Afterwards their spinal cords were damaged using a precisely directed stream of compressed air generated by the impactor. This method was used to simulate a damage causing spinal cord injury in humans, which occurs during traffic accidents. Next, animals were divided into 4 groups with different type of therapy: NAP, estrogens, NAP+estrogens and control group. Our rats were supplemented with estrogens using implants which were gradually releasing estradiol. After surgery, on 4. and 7. Day and, 2.4 and 6 week the rats were functionally tested with CatWalk XT device. The analysis provided us with a lot of data. Many static ( e.g.the size of paw prints) and dynamic (e.g. velocity of raising paws from the ground) parameters were tested.

Results were statistically significant. They were precisely analysed (using Statistica software) and compared to the rest of results from appropriate group. Our experiment proved that the scale of regeneration process depended on used therapy.

**Keywords: Wistar, Rats, CatWalk, Neuroregeneration, Neuronal trauma, NAP, estrogens**

## **Risk of exposure to ticks (*Acari, Ixodida*) and *Borrelia burgdorferi sensu lato*, *Anaplasma phagocytophilum*, *Rickettsia* spp. in the selected recreational areas of Upper Silesia**

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Ticks are ectoparasites, reservoirs or/and vectors of many pathogens. The most dangerous among them are *Borrelia burgdorferi sensu lato* [Bbsl], *Anaplasma phagocytophilum* [Ap] and *Rickettsia Helvetica* [Rh]. These pathogens are etiological agents of such diseases as the Lyme disease, granulocytic anaplasmosis and rickettsiosis. In Poland the main vector and reservoir of these pathogens is *Ixodes ricinus*. Determination of the risk of exposure to ticks and Bbsl, Ap, Rh on selected recreational areas of Upper Silesia.

Ticks were collected by flagging from vegetations and conserved in 70% ethyl alcohol. DNA was isolated from ticks using ammonia method. The presence of pathogens were determined by PCR. To detect Bbsl a pair of primers specific for flagelline gene was used, whereas to identification of Ap, a pair of primers specific for 16S rRNA coding ribosomal RNA was used. To detect Rh a pair of primers specific for *gltA* gene fragment was used. Amplification products were separated electrophoretically in 2% ethidium bromide stained gels.

Presence of the amplification products of size of 482 bp for Bbsl, 274 bp for Ap, and 381 bp for Rh were considered as positive. Generally 69 *I. ricinus* ticks were collected: 1 female, 1 male, 55 nymphs and 12 larvae. The largest number of ticks was collected in Katowice. Larvae were not used in molecular studies.

The conducted studies showed pathogens in 1.7% of ticks. Only Rh was detected in one female collected from Piekary Śląskie. Bbsl and Ap were not detected in the examined material.

Conducted studies showed the low risk of exposure to tick-borne infections of Rh for humans and animals in the examined areas.

**Keywords:** ticks, *Ixodes ricinus*, *Borrelia burgdorferi sensu lato*, *Anaplasma phagocytophilum*, *Rickettsia* spp., Upper Silesia



## High Salt Intake and TNF Inhibition Show No Effect on Arterial Blood Pressure in SHR Rats

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A dose-response relationship has been demonstrated between salt intake and blood pressure. A growing body of evidence indicates that pro-inflammatory cytokine TNF is also a mediator involved in the development of hypertension. Further, it has been shown that a high salt diet induces a pro-inflammatory response, seen through TNF upregulation.

To determine whether a high salt diet exaggerates hypertension in spontaneously hypertensive rats (SHR) and if TNF is involved in this response.

We recorded arterial blood pressure in 4 groups of SHR rats that were put on either a normal or a high salt diet for 8 weeks. The rats received subcutaneous injections twice a week: 1) normal salt diet + saline s.c. (control group, n=6); 2) normal salt diet + etanercept s.c. (n=6); 3) high salt diet + saline s.c. (n=6); 4) high salt diet + etanercept s.c. (n=6). Etanercept, a TNF inhibitor, was administered at 1mg/kg body weight/week. Systolic blood pressure (SBP) was recorded by tail-cuff method weekly. At the end of the study, rats were implanted with an arterial catheter into the femoral artery, and mean arterial blood pressure (MABP) measurements were conducted invasively.

At the end of the study all groups had a SBP above 200 mmHg and a MABP above 160 mmHg. However, neither high salt diet nor anti-TNF treatment significantly affected SBP or MABP measurements.

Our results indicate that increased salt intake has no effect on arterial blood pressure in our model of hypertension. Further, systemic inhibition of TNF with etanercept has no effect on arterial blood pressure in SHR rats, regardless of high or normal salt intake.

**Keywords:** Tumor Necrosis Factor, Hypertension, Cytokines, High salt diet

## **Reconstruction of rat abdominal aorta defects using decellularized vascular scaffold**

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Decellularized tissue have the advantage of being entirely composed of natural extracellular matrix (ECM), giving them numerous advantages in mechanical properties and biocompatibility.

In the study, we present and discuss the possibility of using natural three-dimensional scaffold from decellularized human placental arteries, for reconstruction of rat abdominal aorta defects.

Sodium dodecyl sulfate and 1% Triton X-100 for decellularized human placental arteries are used. We created a decellularized vascular scaffold (length-14mm; outer diameter-1,5mm; inner diameter-1,3mm) from human placental arteries and implanted in defects made in rat abdominal aorta.

Patency of the grafts in all animals were observed four weeks after implantation. The internal cavity of the vascular scaffold was completely lined by endothelial-like cells.

Thus, the possibility reconstruction using decellularized scaffolds was demonstrated.

**Keywords: biotechnology, three-dimensional scaffold, decellularization**

## **Allodynia in transgenic mice lacking parvalbumin and calbindin**

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The study is part of the project considering eventual involvement of calcium-binding proteins in allodynia in mice lacking calbindin, parvalbumin. An allodynia is a clinical feature of many diseases associated with neuropathic pain. It is a condition of central pain sensitization when a stimulus which normally do not cause the pain is recognized as a painful one. Calbindin and parvalbumin are intracellular calcium binding proteins widely distributed in muscle fibers and GABA-ergic inhibitory neurons and interneurons. Recent investigations have shown a relationship between the insufficient activity of those neurons and common neurological diseases.

The aim of the study was to shed light on mechanism of allodynia and role of calbindin and parvalbumin in central nervous system.

In the study we used two transgenic mouse lines – mice lacking calbindin D-28k protein, parvalbumin knockout mice and standard B1-6 line as a control. Tactile nociception was measured by means of von Frey filaments. Thermal nociception was examined on hot-cold plate. In the articles we can find a clue to start von Frey filaments test at the hair of 1,4 g. In contrast our transgenic mice had reacted at the hair of less pressure.

The results of hot-cold plate is between 7,7 -7.8 s. Used these behavioral methods have couple disadvantages: are not easy to apply, quite subjective and are characterized by wide range of inter-individual variability.

Studies on potential role of calcium binding proteins in allodynia in mice lacking parvalbumin and calbindin may shed light on mechanism underlying allodynia and nociception with particular focus on calcium binding proteins.

**Keywords: allodynia, calcium-binding proteins, calbindin, parvalbumin, transgenic mice**

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF PAEDIATRICS I**

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## Menstrual disorders among adolescent girls.

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

**Introduction:** The occurrence of menarche and regular menstrual cycles are important events during girl's pubescence. Full maturity of the female reproductive system occurs after about 2 years after menarche. Menstrual disorders persisting after this period require diagnostics. The most common problems for teenage girls are irregular menstrual cycles and secondary or primary amenorrhea.

**Aim:** The aim of the study was to evaluate the occurrence of menstrual disorders in girls hospitalized in the Department of Children Endocrinology of SPSK 1 in Zabrze.

**Methods:** Retrospective analysis of medical records of 125 hospitalized patients in 2015-2016.

**Results:** The mean age in the study group was 15.6 years (range 12-18 years). On the basis of the interview, physical examination and hormonal assays secondary amenorrhea was the most common disorder (54.4%). Its main cause was eating disorders observed in 84.6% of patients in this group. Irregular menstrual cycles were found in 35.2% of girls, of which 93% were oligomenorrhea disorders, and only 7% - polymenorrhea. The least frequent (10.4%) was primary amenorrhea. The median time from symptom onset to hospitalization was 8.5 months, but in case of eating disorders it was significantly shorter in comparison to a group of girls with irregular menstruation.

**Conclusions:** The most common disorders among adolescent patients are secondary amenorrhea due to eating disorders and oligomenorrhea. Differential diagnosis of secondary amenorrhea should take into account eating disorders (slimming and anorexia nervosa) and conduct a thorough interview in this direction.

**Keywords:** amenorrhea, oligomenorrhea, anorexia nervosa

## Clinical manifestations and diagnosis of myocarditis in children

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Work's tutor: Dr Radosław Pietrzak

**Introduction:** Myocarditis is a common disease in paediatric patients. The signs and symptoms typical of MC e.g. chest pain, weakness and tachycardia are also seen in common cold or respiratory tract infections. Due to this fact it may be misdiagnosed if there is a lack of diagnostic tools. Out of the diagnostic methods used in MC, cardiac MRI is the most useful but it is a costly and still not readily available method.

**Aim:** The aim of this study was to assess the clinical presentation of MC in children and the diagnostic power of chosen tests.

**Materials & Methods:** We performed a review of paediatric patients admitted to the hospital with a diagnosis of MC confirmed by MRI. We reviewed their ECG, echocardiography, cTnI, CKMB and CRP results as well as the clinical presentation.

**Results:** The data of 22 patients were analysed. The age distribution was non-normal with a peak at 14-18 years of age (55%). All of the patients presented with chest pain, 4(18%) with dyspnoea, 9(41%) had fever. 10(45%) children reported an upper respiratory tract infection prior to hospital admission. In 2(9%) children pneumonia and in another 2 gastrointestinal tract infection were diagnosed.

In the ECG ST-T changes were observed in 21 patients, tachycardia in 3 and arrhythmia in 4. The sensitivities of the ECG changes were 95,45%. The cardiac troponin test was positive in 20 cases(90,48% sensitivity), CKMB in 18(81,88% sensitivity) and CRP in 2(9,09% sensitivity). The EF, SF measurements in Echo were within normal ranges for all patients.

**Conclusion:** MC may easily be confused with respiratory tract infections. However, troponin tests and ECG are highly sensitive for MC diagnosis.

**Keywords:** Paediatrics, Cardiology, Myocarditis, Diagnosis

## Evaluation of the state of knowledge on Basic Trauma Life Support and emergencies with children among teachers.

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Work's tutor: Dr n. med. Jolanta Pietrzak

Injuries are a common reason of hospitalization and death among children. Teachers undergo first aid training for the prevention of health problems and injuries occurring at school.

The aim of the study is to assess the level of teachers' knowledge and awareness considering first aid in children's emergencies at school. The study was conducted by performing anonymous questionnaire on 120 teachers at schools. The survey contains 22 questions about personal information, 15 of them were designed to assess teachers' knowledge about performing first aid on children at school. The average obtained score was 11,2/15 (74,8%). No teacher answered correctly to all questions. The best score of 14/15 was gained by 5 teachers .

The worst result of 5/15 was obtained by one teacher. 27 teachers granted less than 50% of correct answers. The best knowledge of the issues teachers showed in the question about epilepsy (114/120 –95%) and choking (111-120 –92.5%). The least of the respondents gave correct answers to the question about CPR ( 43/120 –35%). In questions relating to the possibility of usage of medicaments for emergencies with children, 7 people answered incorrectly. All Physical Education teachers achieved results above the average number of points of all teachers. The surveyed teachers possess only basic knowledge of first aid. Respondents showed good knowledge of first aid algorithms in epilepsy and choking. The significant faults were demonstrated in awareness of issues relating to CPR.

The results show the necessity of teachers' trainings in this field and devising simple as well as universal algorithms of premedical dealing and exporting them among the teachers.

**Keywords: Basic Trauma Life Support, trauma, teachers, first aid, school**



**POST-TREATMENT COMPLICATIONS AFTER ONCOLOGICAL THERAPY IN CHILDREN.**

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Work's tutor: Aneta Pobudejska – Pieniążek, MD

Introduction: Progress in oncological therapy has increased the number of cured children. However, a significant percentage of the group suffer from post-treatment complications.

Aim of the study: Evaluation of long-term consequences of neoplastic disease treatment in childhood.

Materials and methods: 70 medical records of patients treated in Department of Pediatric Hematology and Oncology SUM due to malignant neoplasm throughout 2009-2016, were subjected to the retrospective analysis – 34 females, 36 males.

Results: Final analysis included patients treated for: acute lymphoblastic leukemia(70%), acute myeloblastic leukemia(8,6%), Hodgkin lymphoma(5,7%), non-Hodgkin lymphoma(7,1%), solid tumors(8,6%). The average age of onset 5 years. 60 patients have presented complications. The most common: cardiac – 49 children, thyroid diseases – 15. The average time of complication occurrence:  $4,2 \pm 3,3$  years. There were no significant statistical differences in appearance of complications between patients treated with chemotherapy and treated with combined chemotherapy and radiotherapy( $p=0.525$ ).

Conclusions: Late health complications occur frequently after neoplastic disease treatment in childhood.

**Keywords:** late complications, malignant neoplasm, children

## **Foreign body in the gastrointestinal tract in children - analysis of the proceedings**

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**Introduction:** In children, especially in first few years of life, often comes to accidental swallowing of a foreign body. Most cases are asymptomatic and the diagnosis tends to be suggested by the child or guardian. The purpose of this study is to overview the diagnostic and therapeutic treatment of foreign body ingestion by children, depending on the symptoms, locations and considering the radiopacity of the foreign body in one pediatric surgery center.

**Material:** The study group included 420 patients at the age 1-17 treated in SPSK1 in Zabrze over the period 2009-2016. 55 patients (13%) were admitted to hospital, of which 27 (49%) were treated invasively with the use of endoscopy. None of them required a laparotomy. In 365 patients (87%) outpatient observation was decided upon. In total, 393 (94%) of patients did not require surgical treatment.

**Conclusion:** Most of the foreign bodies present in the gastrointestinal tract do not require surgery and are excreted naturally. Surgical intervention depends on the afflictions or location of the foreign body in the alimentary tract. Without clinical symptoms, patient should be observed on an outpatient basis.

**Keywords:** foreign body, gastrointestinal tract, proceedings

## **Do children with recurrent infections grow well?**

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**Introduction:** The analysis of patient's body weight and height is used to evaluate the child's health condition and it's growth. In order to obtain objectivity of these parameters you should use the centile charts.

**The aim:** Estimation of physical growth of children with recurrent respiratory infections, in relation to healthy children.

**Methods & Materials:** Retrospective study has included 137 children with recurrent respiratory infections, who were divided into 2 groups: 61 children with primary immunodeficiency (PI) with clinical and laboratory disorders and 76 children with clinical symptoms but without laboratory and immunological confirmation of PI. 70 children was a control group. Based on data, the following parameters were analysed: birth body weight and length; body weight (BW) and height during hospitalization. Then this data was evaluated in relation to polish centile charts.

**Results:** During hospitalization 20% of patients with PI had their body weight and height below 3rd percentile. Almost every third child with diagnosed PI had his or her body weight

**Keywords:** physical growth, primary immunodeficiency, recurrent respiratory infections

## Do the age and gender parity exist in chronic kidney disease?

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**INTRODUCTION:** Chronic kidney disease (CKD) is an irreversible condition caused by anatomic or functional abnormalities in renal structure, leading to end-stage kidney disease.

**THE AIM:** The aim of the study was to analyze the etiology and clinical course of CKD in children, regarding their age, gender and treatment methods.

**METHODS & MATERIALS:** The retrospective analysis concerned the data from 951 medical records of 163 children (66 girls, 97 boys) aged 0-18 years, hospitalized in the Department of Pediatric Nephrology of Wrocław Medical University between June 2011 and June 2016.

**RESULTS:** Urinary tract anomalies were the most common cause of CKD (56,4%), regardless of the child's age. Male gender dominated in this group (63%). The further causes of CKD were hereditary renal disorders (13,5%), glomerulopathies (11%), acute kidney injury (8%), unknown (6,8%) and tumours (4,3%). Genetic diseases were the second common cause among younger children (0-12 y; 108 children) (15,7%), while in teenagers (13-18 y; 55 children) – glomerulopathies (12,7%). Hereditary renal disorders and glomerular diseases affected mostly boys, whereas tumours were more common in girls and in teenagers. Out of 163 children, only 30 were chronically dialyzed.

**CONCLUSIONS:** The CKD was seen more often in boys. Younger children comprised the two thirds of the CKD population. Several causes of CKD have also shown the propensity towards age as well as the choice of dialysis method - peritoneal dialysis dominated among younger patients.

**Keywords:** CHRONIC KIDNEY DISEASE

## **Prevalence of micturition disorders in 7-10-year-old school children. Survey among parents.**

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**INTRODUCTION:** Many published epidemiological studies show that urinary incontinence is an important health issue in the population of elementary school children. Intermittent urinary incontinence should be treated as a pathology in patients who are at least 5 years old. This type of disorder can be divided into day-time incontinence and nocturnal-incontinence (enuresis). There is very little data available about the incidence of urinary incontinence in this age group in Poland.

**AIM:** To assess the incidence of micturition disorders in the population of Polish children aged 7 to 10, to analyze accompanying symptoms and social background of these problems.

**MATERIAL&METHODS:** Parents of 954 children (491 girls and 463 boys) were surveyed during parent-teacher meetings. The questionnaire was based on the International Children's Continence Society guidelines. The population was divided into subgroups based on age, sex, place of residence, parents' education level, accompanying symptoms and the type of micturition disorder. The subgroups were compared using statistical methods.

**RESULTS:** One or more symptoms of urinary incontinence were reported in 18% of cases (17.5% of girls and 18.8% of boys). Isolated enuresis occurred in 5.2% (4% of girls and 6.5% of boys). Isolated day-time incontinence was reported in 9.4% of girls and 7.3% of boys. In 16.7% the problem appeared after a period of dryness. In 86.7% of children disorders were accompanied by episodes of constipation.

**CONCLUSIONS:** Bladder control problems are common in the study population. The problem should not be underestimated because if untreated it may lead not only to physical but also serious psychological disorders.

**Keywords:** urinary incontinence; enuresis, daytime wetting; lower urinary tract; pediatrics; urology

## **Application of Intensive Neurophysiological System of Neurophysiological Rehabilitation in children with brain injury - prof. V. I. Kozyavkina**

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**Summary:** Admission. Method of prof. Kozyavkin (System of Intensive Neurophysiological Rehabilitation - SIRN) is a method based on a highly effective technology of treatment for patients with cerebral palsy, the effects of organic paralysis of the nervous system and vertebrology pathology. The basis for Intensive Rehabilitation System is the original method of multisegmental biomechanical correction of the spine developed by prof. V. Kozyavkin.

**Objective:** Presentation of prof. V.I. Kozyavkin method as one of the leading therapies for the treatment of developmental disorders caused by damage to the central nervous system, polymorphism, CP (cerebral palsy) The method of quantitative spasticity measurement with Neuroreflexor. Dynamics of spastic muscle tension group of 10830 patients: decrease of 93%, increase of 0%, no change of 7% Development of new motor function group of 12,256 patients: head control 75%, seat 62%, rolling 28%, standing 41%, free walking 19%. Condition of patients between course courses 7727 patients 45% improvement, 47% state stability, 8% recurrence.

**Results.** Diverse healing influences of the SIRN methodology (System of Intensive Neurophysiological Rehabilitation) that complement and reinforce each other, are aimed at achieving the main goal of rehabilitation - improving patients' life quality. By stimulating compensating possibilities of a child's body and activating brain plasticity, the system creates a new functional state, which opens up possibilities for rapid motional and mental development of the child.

**Keywords:** SRNA (System of Intensive Neurophysiological Rehabilitation vertebrology, biomechanical correction of the spine, CNS (central nervous system), CP (cerebral palsy), polymorphism

## **Granulocytopenia as a complication encountered during IVIG therapy of children with primary immunologic thrombocytopenia.**

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Patients suffering from primary immunologic thrombocytopenia are treated with intravenous immunoglobulins. Such therapy most frequently leads to granulocytopenia. Level of granulocytes decreasing below 0,5 M/l is classified as a severe granulocytopenia, between 0,5 and 1 M/l as moderate and from 1 to 1,5 M/l as mild granulocytopenia.

Clinical analysis of the severity of granulocytopenia in terms of an adverse side effect occurring in IVIG therapy of primary immunologic thrombocytopenia.

Blood tests assessing the level of granulocytes were performed on 47 patients diagnosed with primary immunologic thrombocytopenia, treated with IVIG in the Department and Clinic of Pediatric Hematology and Oncology in Zabrze in 2015 and 2016.

47 patients, 22 girls and 25 boys, aged 1 to 18 years were diagnosed with primary immunologic thrombocytopenia. Average platelet count on admission reached  $19,581 \pm 18,925$  SD M/l. Patients were treated with Privigen in total dose from 0,9 g/kg BW to 2,2 g/kg BW most frequently. The level of platelets increased above 10 M/l usually between 3rd and 5th day of hospitalization. Diagnosis of granulocytopenia was established between 2nd and 4th day of hospitalization. 3 children were diagnosed with severe granulocytopenia, 14 with moderate and 10 with mild. Average time of hospitalization reached 7 days.

Asymptomatic granulocytopenia occurred in 27 children (nearly 57%). No patient got infected during the therapy. Most frequently the level of granulocytes decreased on the second day of treatment. The level of platelets increased over 100 M/l mostly after three days of therapy.

**Keywords:** granulocytopenia, primary immunologic thrombocytopenia, IVIG

## Ocular manifestations of childhood cancer – seemingly insignificant symptoms of severe diseases

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**Introduction:** Despite of the fact that ocular changes are not considered most frequent symptoms in the course of cancer, they can be an important diagnostic factor in this condition.

**Aim:** Characteristics of ocular manifestations in pediatric cancer.

**Material and methods:** The study was based on retrospective analysis of medical records of patients diagnosed with cancer and treated in the Department of Pediatric Hematology and Oncology of Medical University of Silesia in Katowice.

**Results:** The analysed group included 93 children (44 girls and 49 boys), in whom ocular signs were symptoms of main disease. In 47 cases ocular changes were the first manifestation of the disease. The most common symptoms included: loss of vision acuity (N=23), strabismus (N=18), exophthalmus (N=13), ptosis (N=9), leucocoria (N=8), opsoclonus (N=7), diplopia (N=7). Ocular symptoms were a manifestation of cancer located in the orbital area, i.e. retinoblastoma (N=11), acute myeloid leukaemia (N=7), rhabdomyosarcoma (N=5), optic nerve glioma (N=5), medulloblastoma (N=3), nasopharyngeal cancer (N=2), as well as of distant location: brain tumors (N=49), abdominal tumors (N=6), mediastinal tumors (N=2) or tumor of neck (N=1).

**Conclusions:** Ocular symptoms can be the first clinical manifestation of oncological condition, preceding onset of systemic manifestation of the disease. Ocular changes in the course of childhood cancer present with various clinical pictures, and awareness of their significance, together with holistic examination of the patient can play an influential role in implementing prompt diagnostic and therapeutic management.

**Keywords:** cancer, pediatric, ocular manifestations



## Association between serum vitamin D levels and leg pain in children

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**INTRODUCTION:** The aetiology and pathomechanism of recurrent leg pain in children are still insufficiently recognized. Vitamin D has a direct effect on bone formation, its deficiency leads to abnormal bone mineralisation and may be related to the occurrence of leg pain in children.

**THE AIM:** Assessment of the association between serum vitamin D level and leg pain in children.

**MATERIALS & METHODS:** This was a retrospective study involving medical charts of children admitted to Rheumatology Outpatient Clinic with leg pain in years 2014-2016, who during the diagnostic process had a measurement of serum 25-hydroxyvitamin D3 [25(OH)D3] level. Vitamin D deficiency was defined as serum 25-(OH)D3 level below 20 ng/ml. Results were compared with a group of age and gender matched healthy children. T-student test for independent groups was used to evaluate a statistical significance.

**RESULTS:** A total of 59 children (36 girls and 23 boys) with mean age 9.88 years (SD=4.9) were included in this study. The 25-(OH)D3 level was significantly lower in patients with leg pain compared with the control group (23.61 ng/ml vs 27.28 ng/ml;  $p=0.0411$ ). In children with leg pain vitamin D deficiency occurred significantly more often compared with the control group (44.07% vs 25.42%,  $p=0.0335$ ). The most frequently reported localisation of the pain were knees (71.2%).

**CONCLUSIONS:** A significantly lower vitamin D serum level as well as higher prevalence of deficiency were observed in the group with leg pain, compared to healthy children. A measurement of vitamin D level during a diagnostic process could be recommended.

**Keywords:** leg pain, vitamin D, deficiency

## **Electrocardiographic T wave parameters in children with long QT syndrome and vasovagal depressor syncope**

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Introduction: Vasovagal (neurocardiogenic) syncope are the most common in children and adolescents (60-80%). Congenital long QT syndrome (LQTS) is manifested by repolarization abnormalities and predisposition for malignant ventricular tachyarrhythmias leading to recurrent syncope. Electrocardiographic T wave parameters (QT, especially TpTe ), may provide a accurate electrophysiological markers of ventricular arrhythmia risk.

The aim: The study attempted to evaluate RR and QT, TpTe intervals in children with vasovagal depressor syncope and with clinically confirmed LQTS.

Methods & Materials: Retrospective analysis was made in 36 children with LQTS (21 girls and 15 boys; mean age 11years  $\pm$  4) and 13 children with vasovagal depressor syncope (6 girls and 7 boys; mean age 15 years  $\pm$  1,5) treated in the Paediatric Cardiology Department in Katowice. The RR, QT, and TpTe intervals were measured manually in the lead II and V5, and corrected using Bazett's formula (QTcB).

Results The RR intervals were longer ( $p = 0.0001$ ) in the group with vasovagal syncope ( $940 \pm 217$  ms versus  $699 \pm 170$  ms). The QTcB were significantly longer ( $p$

**Keywords: vasovagal depressor syncope, LQTS, children, ECG, QTcB, TpTe, repolarization.**

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF PAEDIATRICS II**

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## **The new quality of life of DT1 patients with modern glucose monitoring FreeStyle Libre Flash system.**

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**INTRODUCTION:** Nowadays increased number of innovative treatments can improve the quality of life (QoL) of patients suffering from type 1 diabetes (DT1). Modern approach to monitoring the interstitial glucose level is FreeStyle Libre Flash system.

**AIM OF STUDY:** The aim of study was to assess QoL and evaluation of metabolic control in children with DT1 using this system.

**METHODS AND MATERIALS:** 77 patients (40 girls) in age: 2-18 y (mean 10y) were enrolled with Internet forums for diabetic patients using Libre. The participants or their parents fulfilled anonymous survey consisted of 33 questions about satisfaction and gratification of treatment and assessment of metabolic control (HbA1c before and after few months).

**RESULTS:** Almost all of 77 patients (96%) described usage of Libre as very good or good in the aspect cooperation and comfort. Especially in long-term they noticed decreased number of hypoglycemias (77,5%) and hyperglycemias (78,8%), what is contributed to more stable blood glucose level. A sensor usually (90%) adhered up to 14 days, mostly with aid of extra protection. In 43% the equipment broke down on average 2 times/several months. The patients noted considerable decreasing of HbA1c level: from 7,88 (SD1,41) to 6,39 (SD 0,64) for all (improvement in 66% participants) over a few months therapy.

**CONCLUSIONS:** Patients with DT1 using FreeStyle Libre Flash system were content with the effects of the therapy. Despite a few disadvantages (extra sensor protection and high risk of failure), the QoL raised considerably and stabilization of glucose level is significant. The improvement of metabolic control (HbA1c) is huge, but should be confirmed in more reliable way.

**Keywords:** type 1 diabetes, quality of life, monitoring glucose system

## THE PREVALENCE OF TSH RECEPTOR ANTIBODIES IN CHILDREN WITH AUTOIMMUNE THYROID DISEASES

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**Introduction/** The most common causes of thyroid disorders in paediatrics are the autoimmune thyroid diseases (Graves' disease, GD and Hashimoto's thyroiditis, HT). Graves disease is found as a main reason of hyperthyroidism and Hashimoto as the most frequent type of thyroiditis among children. Both diseases are characterized by the presence of antithyroid autoantibodies.

**The aim/** The aim of the study was to investigate the prevalence of TSHR-Ab in Polish children with thyroid and non-thyroid autoimmune diseases. We also observed the relations between orbitopathy and level of TSI in GD and HT patients.

**Material and Methods/** The study was based on analysis 240 serum samples obtained from 205 paediatric patients with autoimmune diseases during years: 2006-2012. Analyzed groups demonstrated different autoimmune diseases: 32- Graves' disease, 69- Hashimoto's thyroiditis, 66- type 1 diabetes and 5- juvenile arthritis. Control group consisted of 33 healthy children. In all samples we measured TSH and TSI levels. TBI was assessed in every HT and JA specimen and in most cases of GD and some cases of T1D. TSHR-Abs were measured by bioassay.

**Results/** All control patients, children with JA and T1D without thyroid involvement were negative for TSI and TBI. Forty-seven out of 53 (88,7%) children with GD had positive TSI while those with orbital involvement were positive for TSI in 95,8% (23/24 samples). Only one HT sample had positive TBI value in whole analysed group. Mean TSI levels in GD ( $416 \pm 134,71$ ) were significantly higher in comparison to group without orbitopathy ( $319,86 \pm 156,55$ )

**Conclusions/** TSI is prevalent in children with GD and children with AITD and orbitopathy show high serum TSI levels.

**Keywords:** THYROID DISEASES, RECEPTOR ANTIBODIES, AUTOIMMUNE

## **A healthy mind in a healthy body? Physical activity in children with DT1.**

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To estimate the impact of physical activity (PA) on clinical parameters and glycemic control in children with DT1 and assessment of children knowledge about undertaking PA.

The study included 105 patients of GCZD in age of 8-20 years with DT1 (57% boys) suffering from at least 1 year (average 5,7 years), with a mean HbA1c of 7,4%. Data of weight, height, blood pressure (BP) and lipid panel were collected. The Survey about knowledge concerning PA was conducted with every patient (19 questions). Regularity, duration and intensity of the PA were defined according to METs scale.

69,2% of patients have BMI in norm (centile scale), lipid disorder appears in 29,5% of checked and BP in 81,2% cases are in standard range. All children attended P.E. classes. 45,7% of children run the high-intense PA in the METs scale (about 6h/week). Children performing vs 7,8% and have shorter T1D duration (<5 years). We didn't observed correlation between PA and other clinical parameters (BMI, lipid profile and BP). The blood glucose level is measured before exercise in 92% of cases, the most children know the range of recommended values. 63,8% of questioned are using a pump, 53,7% of them detach it for the exercise. 88% of respondents eat snack with a low/medium GI dependent on glycemic level before PA, 12,9% do it routinely. After-exercise hypoglycemia occasionally occurs in 64,6% comparatively less children had hyperglycemia 44,8%.

Our studies shows that children with DT1 develop a high awareness in the way of undertaking the exercises. More frequent PA is associated with lower HbA1c, shorter T1D duration and male sex.

**Keywords: DT1, sport, clinical parameters**

## **Gamechanger in diabetes: how 640 improves metabolic control and quality of life in pediatric patients.**

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**Introduction:** Modern technologies and their rapid advancements allowed medicine to create sophisticated tools for managing many diseases. Medtronic MiniMed 640G represents a final achievement in managing type 1 diabetes (DM1) on polish market.

**Aim:** A study was performed to assess the parameters of diabetic control and insulin pump (IP) settings as well as the quality of life (QoL) of the patients who suffer from DM1 after introducing personal IP 640G with SmartGuard technology.

**Materials and Methods:** 26 girls and 21 boys with well-controlled DM1 ,mean HbA1C was 6.9%(5.6-8.8 SD=0.7) were examined, mean age 5.3 years. The mean time from diagnosis was 3.6 years with a mean time to introduce 640G 2.8 years. Patient were previously treated with IP with or without hypoblocade. Their target range (TR) was 70-140 mg/dl. We have gathered and analyzed parameters regarding their pump therapy and assessed their QoL using two surveys(srv): PedsQLTM 3.0 Diabetes measuring the QoL and the authorial srv which measured satisfaction of 640G therapy.

**Results:** The average (avg) blood glucose(BG) level was 151.5 mg/dl(SD=25.4) with a mean 8 BG measurements daily. We found that patients have been protected from hypoglycemia(hpg) as only 4% of readings were below TR however 640G does not protect from hyperglycemia(hrg) as 45% of readings above TR. QoL has improved, mainly due to reduction of fear of hpg and confidence as well as trust in 640G system usage. PedsQL showed reduction of DM symptoms.

**Conclusions:** Medtronic MiniMed 640g protects patients from hypoglycemia. Results of both surveys confirm that patients; QoL improved on 640G, yet long-term complications still are an issue for patients.

**Keywords:** diabetes, technology, insulin pump, quality of life



## **Clinical characteristics of children with monogenic diabetes GCK MODY compared with current recommendations.**

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Endocrinology and Diabetes

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Introduction:GCK MODY is one of the most common types of MODY. It is caused by mutations in the glucokinase gene which determines the cells energetic sensor.

The aim:The clinical and metabolic characteristic of children with GCK MODY.

Methods & materials:The study group were patients with GCK MODY monitored in the Department of Diabetes and in the Diabetes Clinic of GCZD in Katowice. In study group were assessed: mean age of patient at the moment of diagnosis, metabolic control, immunological and biochemical status, interpretation of oral glucose tolerance test, type of treatment.

The results:The study group included 21(6 girls,15 boys).The mean age of onset of glucose metabolism disturbances was 9,6 years (min 2,5; max 14).The mean HbA1c at the age of onset of glucose metabolism disturbances were 6,41% (min 5,5; max 7). Negative beta cell antibodies (GAD,IA2,ZnT8) were found in all patient. At time of onset of glucose metabolism disturbances 83,33% subjects had normal level of C-peptide. 2 patients (9,5%) met the diagnostic criteria for diabetes in OGTT in the cases of 15 patients (71,4%) were diagnosed IFG and/or IGT. Before the diagnosis of GCK MODY insulin was used in 13.6% and after in 9% of patients.

The conclusions:GCK MODY is heterogeneous disease with a different metabolic control as well as a type of treatment. When compared with current recommendations it appears that some of the patients do not met all criteria for diagnosis an treatment for GCK MODY.The main positive aspect of genetic testing in study group was to determine the etiopathology and molecular basis of the disease which allowed making an accurate diagnosis and implement an adequate treatment.

**Keywords: GCK MODY, diabetes, paediatrics, glucose metabolism disturbance, glukokinase,**

## **Total daily insulin dose as well as basal rate of insulin were lower in patients with better metabolic control.**

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Introduction: Functional intensive insulin therapy is a first choice in type 1 diabetes. Basal insulin mimics basic insulin secretion by  $\beta$ -cells and bolus doses are given before meals to imitate 1st and 2nd phase of insulin secretion and also to correct hyperglycemia. Goal of T1D treatment is to achieve euglycaemia together with minimizing hypoglycemic episodes.

Aim: Evaluation of TDD and basal rate of insulin in children with T1D treated with a personal insulin pump regarding the metabolic control.

Materials & Methods: Data of 326 patients (pts) with T1D (172 boys) treated with CSII were analyzed. Metabolic control (average glycaemia (AVBG), glycated haemoglobin (HbA1c)) and number of hypoglycemic episodes were evaluated in patients with TDD  $>$  or  $<$  0,3U/kg.

Results: Number of hypoglycemic episodes was comparable. In pts with TDD 0,7 U/kg (182,8 $\pm$ 37,8 mg/dl). Similarly was noted for HbA1c (8,15 $\pm$ 1,89% vs. 8,36 $\pm$ 1,45%, respectively,  $p=0,03$ ). In pts with basal rate  $>$ 0,3 U/kg AVBG was 171,1 $\pm$ 35,7mg/dl and was lower ( $p=0,004$ ) than in those with basal dose se of better matched meal doses, less often missing pre-meal boluses, therefore avoiding postprandial hyperglycemia and corrections). Frequency of hypoglycemic episodes did not depend on TDD and basal rate in the studied group.

**Keywords: Diabetes, children, CSII, hypoglycemia, metabolic control**

## **Attitudes towards drinking behavior among adolescents with type 1 diabetes- preliminary study.**

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**Introduction:** Alcohol consumption has a multidimensional influence on the quality of health in the society, including children. ESPAD 2015 report in Poland shows that over 80% of younger students have drunk alcohol at least once in their lifetime and more than 90% from older school children group. An average of 13 % of students reported having been intoxicated during the last 30 days.

**Objectives:** 1.To determine the level of alcohol impact awareness on human body, glucose concentration and insulin administration in the population of adolescents with type 1 diabetes. 2.To assess the information sources about the alcohol and related harms in patients with type 1 diabetes. 3.To compare attitudes towards alcohol consumption between adolescents with and without diabetes.

**Material & methods:** Participants fill out a questionnaire. There were 60 adolescent (aged 15-18) patients with type 1 diabetes compared to the same age children without diabetes (control group). Moreover the study contains the detailed case reports investigating hospital admissions due to alcohol intoxication among diabetic adolescent patients.

**Results:** Results show that alcohol consumption is similar in study and control group, (89,4% vs. 63,9%). 85% respondents with diabetes assured that they are aware of alcohol harmful impact on diabetes. Most of them as the main source of knowledge have chosen websites. **Conclusions:** Frequency of alcohol abuse is similar in both study groups. Psychoactive substance abuse among adolescents and its impact on glycaemia should be the diabetes education concern.

**Keywords:** diabetes type 1, alcohol, adolescents

## **The influence of disease duration on the number of glycaemia measurements, the hypoglycaemic episodes and the amount of administered insulin in patients with type 1 diabetes treated with a personal insulin pump.**

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med. Joanna Chrzanowska

Introduction: Patients with diabetes have to control the glycaemia, which allows to adapt the dose of insulin administered. In the treatment of diabetes they should avoid episodes of both hypoglycaemia and hyperglycaemia.

Aim: Evaluation of the number of glycaemia measurements, the hypoglycaemic episodes and the amount of administered insulin at children with T1D treated with a personal insulin pump depending on the duration of disease. Materials and Methods: We analyzed data of 326 patients with T1D (172 boys) treated with CSII. The amount of glycaemia measurements, the hypoglycaemic episodes, TDD (total daily dose)/kg and the amount of insulin administered as basal rate/kg were evaluated in terms of the duration of the disease.

Results: The mean number of glycaemia measurements was  $6.97 \pm 3.37$ , no significant difference between the genders. There was a correlation between the duration of diabetes and the number of measurements ( $r = -0.29$ ). There was no correlation between the occurrence of hypoglycaemic episodes and the duration of the disease. The average TDD/kg was  $0.74 \pm 0.24$ . The amount of insulin administered as basal rate/kg was  $0.27 \pm 0.12$ . Base%TDD was  $35.80 \pm 12.03\%$ . There was a correlation between the duration of diabetes in children and the measured parameters. The child's gender had no an impact on the above parameters.

Conclusions: The longer duration of T1D in children, the less measurements of glycaemia is performed, which concerns girls and boys equally. The duration of diabetes does not affect the amount of occurrence of hypoglycaemia. The longer duration, the higher applied TDD/kg and the amount of basal insulin is, regardless of the gender of the child.

**Keywords: diabetes type 1, children, hypoglycaemia**

## The prevalence of autoimmune diseases among patients with Turner's Syndrome

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Work's tutor: Dr hab. Aneta Gawlik

**INTRODUCTION** Main features of Turner's Syndrome as short stature, lack of puberty or webbed neck are commonly known. Many researches show that patients with this syndrome have predispositions to develop autoimmune diseases.

**AIM** This work was carried out to estimate predispositions to autoimmune diseases among girls with Turner's Syndrome. We were looking for diseases such as autoimmune thyroid disease, coeliac disease, type 1 diabetes mellitus, psoriasis, vitiligo, alopecia areata.

**METHODS & MATERIALS** The data was collected on the basis of the medical history of 106 girls with Turner's Syndrome, hospitalized at the University Department of Pediatric Endocrinology during the period 2001-2016. Karyotypes were divided into 4 groups: 45X0, 45X0/46XX, isochromosome and all other karyotypes marked as "other". We considered the start of estradiol exposure from the moment of spontaneous breast development-observed at stage 2 in Tanner's scale or start of estradiol replacement therapy.

**RESULTS** The mean age of patients diagnosed with autoimmune diseases was 12.6 +/- 3.9. Our study shows that among 106 patients, 31 (29,3%) had positive thyroid autoantibodies of which 10 (9,43%) were diagnosed with autoimmune thyroid disease. 1 girl had coeliac disease diagnosed (0,94%), 2 had type 1 diabetes mellitus (1,9%), 2 psoriasis (1.9%), 3 vitiligo (2.8%) and one alopecia areata (0.9%). Statistics showed moderated correlation between the age at which estradiol exposure began and the age of manifestation of autoimmune disease ( $r=0.55$ ;  $p=0.0059$ ).

**CONCLUSIONS** Girls with Turner syndrome are predisposed to the presence of auto-antibodies. Estradiol exposure may affect the autoimmune response.

**Keywords:** Turner's Syndrome, autoimmunology, autoimmune thyroid disease

## **Growth deficiency - important problem? 3-years observation of the growth rate of children's population from Kudowa Zdrój**

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Work's tutor: dr hab. n. med. Ewa Barg

The aim: Observation of growth velocity in children with growth deficiency.

Methods and Materials: The study group consisted of students of primary school and secondary school in Kudowa Zdrój. The children have been adequately studied three times during 3 years (2014-2016). In the year 2014 has been studied 545 children, in the year 2015 - 548 children and in the year 2016 - 513 children. We analyzed a group of 82 children with height under 10th percentyl

Results: Height under 10th percentile has been occurred from 8.26% (in 2014) to 11.3% (in 2016) in the population of children in Kudowa Zdrój. The children with height  $\geq 3$ rd pc has been made up 57.32% (47 children) of the analyzed group. The greatest height deficiency there are detected by three patients with deficiency of 19.5 cm, 14.5 cm and 8 cm under 3rd pc respectively. A nine-year-old boy with the greatest height insufficiency was treated by growth hormone and he has been grown 15,5 cm after first year and 6 cm after second year of therapy, height insufficiency was 7 cm under 3 percentile. Height deficiency amounted from 0.5 cm to 4.5 cm beneath 3rd pc in the rest of group and has been observed of normal growth velocity.

Conclusions: Children with height under 10th percentyl needs observation of growth velocity. Most of children have a proper growth velocity. Frequent measurement of height allows for earlier diagnosis of growth deficiency.

**Keywords: growth deficiency, growth velocity, children**

## The secular trend of overweight and obesity among children in preschool age – risk factors

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In recent years, there is a growing trend related to the presence of overweight and obesity among the youngest age groups.

The purpose of this study was to compare anthropometric data in order to determine differences observed over the last 6 years and assess the frequency of overweight and obesity among children in preschool age.

The research conducted in 2017 was based on the methodology used in the Periscope test carried out in 2011 on the group of preschool children. Questionnaire survey included parents of preschool children from the city of Katowice and then anthropometric measurements of children (average age – 5 years) were conducted. The measurements covered height, weight, BMI and BMI Z-score. The children were divided into two groups: Group 1 – children surveyed in 2011, Group 2 – children surveyed in 2017.

An average age of children in the Group 1 was lower than in the Group 2 and it was 5,1 vs 5,5  $p=0,001$ . An average BMI Z-score value was lower in children from the Group 2 than in the Group 1, respectively 0,1 vs. 0,5  $p=0,00001$ . An average age of parents participating in the study was lower in the Group 1 than in the Group 2 and it was (respectively) 33 vs 35 years  $p=0,0001$ . The percentage of overweight children amounted to (respectively in the Group 1 and 2): 17% vs 8%  $p=0,004$ . The author observed positive Pearson correlations between BMI Z-score of the child and BMI of the mother:  $p < 0,001$   $r=0,26$ .

Contrary to the current data concerning the overweight and obesity among children, the above-mentioned study indicates a significant decrease in the percentage of overweight among preschool children. Overweight among children still depends on the BMI of parents.

**Keywords: overweight, obesity, children, anthropometric data, comparison**

## **Influence of growth hormone treatment on bone quality and risk for osteoporosis in patients with Turner syndrome.**

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Work's tutor: Assoc. Prof. Aneta Gawlik, MD, PhD

**INTRODUCTION:** Turner syndrome (TS) is a common chromosomal disorder in females that is associated with characteristic phenotype, including impaired skeletal growth and deficiency of puberty symptoms. While childhood growth hormone treatment (GHT) is common in TS, its impact on bone health has been still poorly understood.

**THE AIM:** The purpose of this study was to evaluate efficacy of GHT and its influence on hormonal balance, bone quality and risk for osteoporosis in TS patients.

**MATERIALS & METHODS:** In this retrospective research 112 TS patients aged 4-20 y/o were analysed in terms of karyotype, calcium and phosphate metabolism, bone mineral density (BMD), height standard deviation score (hSDS), BMI percentile, body composition and serum levels of insulin-like growth factor 1 (IGF-1), alkaline phosphatase (ALP), thyroid and sex hormones at time points before and after GHT.

**RESULTS:** Statistically significant alterations ( $p < 0,05$ ) were observed in hSDS, total body BMD, LH and E2 serum levels after termination of GHT. In the subgroup of patients treated also with hormone replacement therapy (HRT) greater bone age delay (BAD) ( $p = 0,005$ ) and lower L1-L4 Z-score ( $p = 0,012$ ) were revealed. We found correlations ( $p < 0,05$ ) between patients' age of initiation of GHT and BAD ( $r = 0,54$ ), hSDS ( $r = -0,22$ ) as well as total body Z-score ( $r = -0,44$ ).

**CONCLUSION:** GHT improves skeletal growth and bone quality and, as a result, lowers risk of osteoporosis. Moreover, it does not interfere hormonal balance in TS patients. Study showed that HRT worsens efficacy of GHT and bone condition. GHT for TS patients should be considered at earliest possible age to allow them achieve the most adequate bone age to their chronological age.

**Keywords:** Turner syndrome, growth hormone treatment, osteoporosis



## What factors influence the remission phase in children with type 1 diabetes (T1DM)?

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Introduction: Remission phase in T1DM may be a time for potential interventions aiming to preserve remaining  $\beta$ -cells from destruction.

The aim: Analyze frequency of remission (ISPAD2014: daily insulin requirement (DIR) on of Silesia, Poland. Analyzed were: sex, age, C-peptide, blood glucose, blood pH (at diagnosis); height, body mass and BMI SDS; presence of antibodies typical for T1DM and other autoimmune diseases (celiac/thyroid diseases). Initially patients received intensive insulin treatment i.v.. HbA1C and DIR were controlled every 3 months for 2 years.

Results: 115(59%) patients achieved remission that started after  $2.80 \pm 2.55$  (0-10)mths and lasted for  $7.13 \pm 6.62$  (0-28) mths. Remitters had higher body mass SDS ( $0.25 \pm 1.25$  vs  $0.24 \pm 1.3$ ;  $p=0.009$ ), BMI SDS ( $-0.19 \pm 1.49$  vs  $-0.66 \pm 1.16$ ;  $p=0.02$ ) and blood pH ( $7.34 \pm 0.11$  vs  $7.28 \pm 0.18$ ;  $p=0.03$ ) at admission. Remission occurred in less patients with a concomitant autoimmune disease (41% vs 62%,  $p=0.04$ ). Remission duration positively correlated with blood pH ( $r=0.22$ ,  $p=0.02$ ) and inversely with time from T1DM diagnosis to achieving remission ( $r=-0.21$ ,  $p=0.03$ ). C

conclusions: Nearly 2/3 of patients entered remission. Its mean duration was more than 6 months. Results suggest that children with higher body mass/BMI are more likely to achieve remission and that the better patients' clinical condition (higher pH) at diagnosis - the more frequent and longer the remission phase.

**Keywords: T1DM, children, remission**

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## **SESSION OF ORTHOPAEDICS**

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## **Effectiveness of ultrasound in evaluation of treatment effects in carpal tunnel syndrome.**

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Work's tutor: Piotr Rydel

**Background.** The carpal tunnel syndrome is the most common compression neuropathy that causes severe distress. Currently an electromyography is considered to be the golden standard in the diagnosis of this disease. More and more papers are being published on the subject of the suitability of ultrasonography in diagnosing and excluding of other causes. Ultrasonography enables visualization of the median nerve and its narrowing area, which is the main cause of the symptoms.

**Aim.** The purpose of the study is to assess the usefulness of ultrasonography as a tool for observing changes occurring in the medial nerve after performing a decompression procedure.

**Material and methods.** The study was carried out in the group of 11 patients diagnosed with the carpal tunnel syndrome. The parameters (cross-sectional area and diameter) of the nerve appearing in the ultrasound examination, performed before the procedure and one month after the surgery were compared. The frequency of the symptoms occurring and the factors and comorbidities predisposing to carpal tunnel syndrome were defined on the basis of the survey. A hand dynamometer was used to measure grip strength.

**Results.** After-treatment ultrasonography showed significant median nerve parameters' improvement in comparison to the prior examination. Both the cross-sectional area and diameter increased about 200% and 50%, respectively. The patients claimed significant improvement of hand fitness and decrease of pain.

**Conclusions.** Ultrasonography is an easily accessible, well tolerated by patients method of assessing the median nerve in the distal segment both in pre and post-surgery of the carpal tunnel syndrome.

**Keywords:** carpal tunnel syndrome, ultrasonography

## **Novel technique of medial patelo-femoral ligament reconstruction - prospective results evaluation**

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Work's tutor: Marek Trams, MD

**Introduction:** Patella instability is quite an often problem among immatures. Surgical reconstruction of medial patello-femoral ligament, is a preferred option for stabilization.

**Aim:** The aim of this study was to evaluate the results of medial patellofemoral ligament reconstruction for patellar instability and to introduce the novel surgical technique adjusted for adolescent patients.

**Materials and methods:** We prospectively evaluated 22 patients (14 females and 8 males, an average age of 14,95 in the time of surgery, range: 13-16, and at least 2 lateral patella dislocation, mean: 4,18, range 2-10, 11 left and 11 right knees). All patients were qualified, treated and controlled by the same surgeon at 2, 6, 12, 24 and 48 weeks postoperatively and rehabilitated in different centers at their home places. Kujala scoring questionnaires were filled during qualification for surgery and postoperatively during March 2016 (mean follow up: 2,65 years, range: 1,3-3,83). All of patients underwent MPFL reconstruction using autologous gracilis tendon graft, transmitted through 3mm drills in the patella on its medial side in the native patellar attachment of the MPFL, with oblique tunnels tangent to them, what allowed to fix the graft in the patella without screws with typical femoral fixation screws.

**Results:** While mean Kujala score before surgery was: 70 (+-10,1), such MPFL reconstruction let Kujala score to rise to 94,3 (+-4,4),  $p < 0,001$ . Results such as patello-femoral joint stabilization with no cases of recurrent dislocation, full knee range of motion sum up to very satisfying final outcome.

**Conclusions:** This study indicates that MPFL reconstruction technique should be considered a valuable treatment option.

**Keywords:** patella instability MPFL reconstruction gracilis

## The occurrence of predisposing factors to hip osteoarthritis

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Work's tutor: PhD Józefa Dąbek

**Introduction.** There used to be a common belief that hip osteoarthritis could only affect elderly people. However, it has been observed that it can also affect younger generations, causing disabilities and their absence at work. The aim of this study was an assessment of predisposing factors to the development of osteoarthritis among orthopedic patients.

**Methods & Materials.** The study was carried out on 100 patients with degenerative changes in hip joints, who were admitted in Orthopedics wards of various regional hospitals. The study involved 49 women (49%) and 51 men (51%) whose average age was 65. The results were obtained via patient interviews and the author's survey.

**Results.** The most common osteoarthritis risk factors in the study group were: abdominal obesity – 94 (94%), sedentary lifestyle – 62 (62%), spine curvature disorders - 58 (58%), heavy physical work - 51 (51%), smoking - 47 (47%), standing for long periods of time - 45 (45%), hip osteoarthritis in the family - 32 (32%), past inflammatory joint diseases - 32 (32%), serious injuries - 27 (27%), diabetes - 25 (25%) and contact with heavy - 19 (19%).

**Conclusions.** 1. Patients from the study group were seriously affected by the predisposing factors to osteoarthritis development, mostly abdominal obesity and sedentary lifestyle. 2. There is a requirement to lead a wide educational health campaign in order to eliminate the osteoarthritis risk factors and, as a result, to prevent the development of this condition.

**Keywords:** coxarthrosis, risk factors

## **Osteoporosis in postmenopausal women – divergence in guidelines and daily clinical practise**

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Work's tutor: prof. dr hab. n. med. Jerzy Chudek, dr n.med.  
Barbara Pietrzyk

**Background:** The data concerning the effect of risk factors on the development of osteoporosis based on the Fracture Risk Assessment Tool resulting in increased incidence of fractures and factors that may affect the lack of continuity of therapy.

**Aim:** Analysis of persistence between guidelines and daily clinical practise in the treatment of postmenopausal osteoporosis. **Patients and Methods:** 154 postmenopausal women participated in this survey. Study was a detailed questionnaire. FRAX calculator was used for the estimation of the risk of next fracture. Analysis included period of time of therapy for osteoporosis and specialist outpatient care.

**Results:** The average age of the study group (N= 154) was  $64\pm 12$  years and of the group diagnosed with osteoporosis (N=40) age  $73 \pm 9$  years. With osteoporosis 82.5% had a history of bone fracture, bone densitometry in 85% with diagnosed osteoporosis 80% over last year experienced a fall. 75% with diagnosed osteoporosis received vitamin D, however two-third of them were not considered it as a therapy for osteoporosis. 12.5% of patients did not use any drugs for osteoporosis, but supervised by 4 care professionals.

**Conclusion:** The obtained results suggest that treatment of patients with osteoporosis is insufficient, inconsistent with recommendations. Only 12.5% of patients with osteoporosis received optimal treatment despite the fact that, on average, patient are supervised by 4 care professionals. Vitamin D supplementation is not perceived as the treatment of osteoporosis showing a need for education.

**Keywords:** Postmenopausal osteoporosis, risk factors treatment, compliance

## **A comprehensive analysis of hip fractures within polish population aged 50 and older from 2009 to 2015.**

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Work's tutor: Dr Robert Wilk

**OBJECTIVE:** Hip fractures are one of the most common osteoporotic fractures, concerning the patients aged 50 and older. The purpose of this epidemiological study is to present tendencies of hip fractures occurrence within polish citizens, divided into age groups, with regards to gender, between 2009 and 2015.

**MATERIALS AND METHODS:** National Health Fund records between 2009 and 2015 with ICD-code S 72, S 72.1, S 72.2 were included in the analyze. Femoral neck fractures and trochanteric fractures were analyzed separately. All fractures occurred in citizen aged 50 years and older living in Poland.

**RESULTS:** The analyze has revealed that the total number of hip fractures within both female and male groups has increased by nearly 19% throughout the years 2009-2015. At the same time, overall rates of femoral neck fractures and trochanteric fractures remain without any remarkable changes. The group of female patients aged 80 and older has the highest fracture ratio, with it's peak value reaching 881,1.

**CONCLUSIONS:** Increasing occurrence of hip fractures among polish society together with it's aging in the near future may become a serious problem. Therefore early osteoporosis prevention, especially among female citizens, as well as fracture treatment directed towards elderly patients implementation in national health care system should be considered.

**Keywords:** hip fractures, older patients, epidemiology, osteoporosis, age



## **Rhizarthrosis: a new perspective for late stage disease's treatment.**

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Work's tutor: Dr Mindaugas Minderis

**INTRODUCTION** 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.

**AIM** 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).

**MATERIALS AND METHODS** 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, 10-point 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.

**RESULTS** 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.

**CONCLUSIONS** 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

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## **SESSION OF PHYSIOTHERAPY AND PHYSICAL ACTIVITY**

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## Students of Physiotherapy – to pupils The clash of theory with practice

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Work's tutor: Dr Anna Brzęk

In Poland due to the lack of funds for cyclic and longitudinal trainings in ergonomics of pupils, they are limited to lectures.

The aim of the study was to present the principles of ergonomics in everyday life, to test the effects of the short-term training in practice, as well as to verify the application of the theory in practice among students of Physiotherapy SUM.

Within the Katowice City Hall project "From Kindergarten to Senior" as a part of the "School of Healthy Spine" 6 workshops were carried out at the Primary School no. 67 in Katowice. 123 pupils from the first to the sixth grade took part in them. The workshops concerned the following topics: the correct sitting and standing postures, the proper use of a backpack. The Chenau corset was shown and discussed. The X-ray of cervical abdomen with correct structure and idiopathic scoliosis was presented.

The study revealed that schoolchildren had a surprising lack of knowledge when it comes to packing their backpacks. More than 75% children took some unnecessary things to school. The classes were held on Friday but in their backpacks they had things needed for Monday lessons. Movement habits examined at each subsequent session were not correct enough (19.51%), although children were able to describe them correctly (65.85%)

Conducting practical activities related to ergonomics is absolutely necessary in these age groups to shape their correct movement habits and it may become a part of the prevention of postural defects. The cyclicity and repetition of such activities during the whole school year are very important. Practical activities carried out only occasionally are only a source of theoretical knowledge.

**Keywords: posture, ergonomics**

## Injuries in sport climbing

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**Introduction:** Sport climbing is more and more popular kind of sport. As an extreme sport, there is a high risk of injury. From the analysis of literature it follows that the upper limb is the most common part of the climbers body which is exposed to trauma.

**Aim of the study:** The aim of the study was to assess quantity and kind of trauma in the hands of sports climbers.

**Materials and methods:** Research group was a 212 climbers in the 12-61 age. Regularity of the training and the VI level as a minimum difficulty of the climbing road was the criterion for inclusion. Author's questionnaire was used as a research tool.

**Results:** Bouldering was a most common type of climbing in a research group (N=83), "top roping" was the second (N=71) and the last- lead climbing (N=58). 90% of respondents have a wrist/hand pain during the climbing training, but only 5,7% of them stop training when the pain symptoms occur. 75% climbers damaged hand/wrist during the training. Pulley was the most common part which was damaged. There is a severe positive correlation between variables pulley trauma and III finger trauma ( $r=0.613$ ,  $p<0.001$ ). There is moderate positive correlation between variables carpal collateral ulnar ligament and pinch grip ( $r=0.355$ ,  $p<0.05$ ) and also between variables carpal tunnel syndrome and training practice ( $r=0.488$ ,  $p<0.001$ ).

**Conclusions:** Traumas and pain symptoms of the movement system are common problems in the climbers group. Upper limb is the most exposed to injuries because of the specificity of activity. Ignoring a pain symptoms inclined serious traumas in the research group.

**Keywords:** Sport climbing, Climbers, Injuries, Bouldering

## **The influence of the phase of the menstrual cycle on the incidence of injuries in athletes**

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Introduction - After completion of menstruation begins next menstrual cycle, which consists of two phases: the follicular phase and the luteal phase preceded by ovulation. Each of them has a specific distribution of hormones that cause a number of changes in the female body.

Aim of thesis - The aim of the study is to assess the influence of the menstrual cycle on traumatism among women training athletics and volleyball.

Material - The study included 42 female trainees athletics and volleyball at the age of 18-35 years with injuries to the musculoskeletal system.

Method - Used an anonymous questionnaire by their own consisting of 42 questions. They included in their gynecological history and basic information about injuries.

Results - The study involved 18 athletes and 24 volleyball players. At 41 people were musculoskeletal injuries. More than half the women injury occurred in the period before ovulation. Most often it occurred to ankle sprains.

Conclusion - Phase of the cycle has a significant influence on the traumatism among athletes.

**Keywords: menstruation, injury, menstrual cycle**

## **Somatognosia in pre-school and early childhood**

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The orientation in the body scheme, also called somatognosis, is responsible for the awareness of own body, its boundaries and possibilities, and orientation towards other objects in space. Full body perception is influenced by information coming from atrial, tactile and proprioceptive

The aim of this study was to determine the quality and observation of somatognosis formation in pre-school and early childhood children.

The research group consists of 100 children including 50 girls and 50 boys aged 5-7 from primary schools and kindergartens from Silesian province. During the study, diagnostic tests were conducted to assess the left-to-right side distinction, the naming of individual body parts, the cross-over instructions associated with hearing-motor coordination.

Based on the results, somatognosis has been evaluated for the child, including left and right awareness. In younger children there is a poor orientation in the scheme of their own body. Girls do better with the naming of their individual parts compared to younger boys. Left and right-side awareness and cross-referral disorders occur in both girls and boys and respectively in the group of 5 years as well as 7 years.

The correct perception and feeling of owns body is an introduction to determining spatial relationships in the world around us. Somatognosis disorders may imply delayed development of the child, cause learning difficulties in reading and writing, and, above all, developmental dyspraxia. Somatognosis and kinesthesia have a great impact on movement - the greater if movements are more complex.

**Keywords: Somatognosis, coordination, body scheme, children, pre-school, kindergarden**

## **The way I see my body - analysis on the teenagers' body esteem according to physical activity and diet**

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Introduction: Adolescence is a very important and difficult stage of human growth. It is the time when the body image is created. Body shape standards are defined by beauty trends and negative opinions of age-mates. It may cause lack of confidence connected to the individual parts of teenagers' body and weight.

The aim: The aim of the study was to analyze the teenagers' body esteem according to physical activity and diet.

Methods & Materials: 449 teenagers took part in the research: 186 girls(41,43%) and 263 boys(58,57%) aged 12-19( $x=15,42$ ;  $SD=1,85$ ) from secondary and post-secondary schools around Silesia. Method used for the research was the questionnaire consisting of metrical part, closed questions connected to the research problem and two questionnaires: Subjective Experience of Works Load (SEWL) and Body Esteem Scale (BES).

Results: Almost half of the questioned girls(47,31%) and half of the boys(50,19%) have never heard any unpleasant opinions regarding their body. The majority of respondents(63,45% of girls; 70,35% of boys) have faced negative opinions about their age-mates' appearance. The study showed that 56,98% of girls and 30,78% of boys had been at least once on weight-loss diet. Both girls(77,42%) and boys(81,75%) declared exercising regularly. The average BES results varied between 3,4 and 3,9 points.

Conclusions: Teenagers have positive opinions about their body. The girls are more focused on managing their weight and diet more often than boys. Diet has positive impact on girls' sense of physical attractiveness. There is a strong correlation between acceptance of body weight and girls' body esteem. Physical activity has stronger impact on perception of physical attractiveness for boys than girls.

**Keywords: physical activity, teenagers, diet, physical attractiveness**



## Assessment of the risk of injury among people exercising in the gym

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**Introduction:** Nowadays, more people are deciding to increase their physical activity through regular workouts in the gym. Exercisers are often unaware of the fact that performing strength training, often without proper supervision, contributes to injuries within the musculoskeletal system.

**Aim:** The purpose of the study is to determine the risk of traumatic injury among people who exercise in the gym and to assess their knowledge of physical exercise physiology.

**Materials and Methods:** The original questionnaire was used for the research, that consisted of two parts, a metric and a main part containing open and closed questions. The study group consisted of 80 adults, exercising at the gym at least 3 times a week.

**Results:** The analysis of data shows that people who regularly exercise at the gym increase the risk of injury within the musculoskeletal system. Such a state of affairs is due to the fact that among the respondents knowledge about physical exercise physiology is incomplete.

**Conclusions:** People who take physical activity in the form of gym training, often without early preparation, or adequate help from personal trainers, are at increased risk of injury.

**Keywords:** Injuries, training, gym

## Assessment of physical activity level of students of Silesian Universities in relation to BMI

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Physical activity is one of the basic aspects of a healthy lifestyle. In combination with a well-balanced diet, this allows to maintain a healthy weight of body. According to Body Mass Index (BMI) there is a possibility to estimate risk of occurrence of diseases such as: diabetes, ischemic heart disease or atherosclerosis.

The aim of this work was to estimate the correlation between BMI and intensity, time duration and probation of sport activity of students of silesian schools.

In the examination participated 317 students from the 5 Silesians Universities. The author's questionnaire was used, which contained 31 questions. Likert scale was used in 13 questions.

Statistical analysis showed a strong linear relationship ( $r_{xy} = 0,82$ ) between BMI and probation of sport activity. Moderate correlation ( $r_{xy} = 0,64$ ) between BMI and the amount of workouts per week and weak relationship ( $r_{xy} = 0.30$ ) between BMI and subjective assessment of training intensity.

**Keywords: sport, BMI, students**

## **Knowledge of the occurrence of postural defects in children aged 9-13 years and the use of electronic devices**

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Introduction - Postural body defects are a large problems among school-age children. Lifestyle has been changed by electronic devices used by children. Computer games and television programs have become a primary forms of entertainment especially among children. Physical activity has been reduced. The knowledge of children's bad body posture is insufficient.

The aim of the study was to evaluate the knowledge of bad body posture among pupils aged 9-13 years. Furthermore, this study elaborates the relationship between electronic devices used and bad body posture.

Material and Methods - Presented study was a study in which a group of school children in elementary schools in the region of Silesia in Poland have been examined. The study involved the group of 182 school children at early school age - between 9 and 13 years old (mean age=  $11,18 \pm 0,88$ ). Questions in author's questionnaire involved the use of mobile, tablet, PC and TV.

Results - 56.6% of the pupils declared that they have the postural defects. No detailed knowledge was observed. Almost 70% of pupils believe, the kyphotic sitting position is correct for spine. 42.9 % of examined children have been using electronic devices regularly each day. The participants who used PC or computer ranged between the hours of 1 and 2. 41,9% of pupils have been watching TV more than 2 hours a day. The tablet has been used the least.

Conclusions - Children spend a lot of free time with their electronic devices. It is necessary to implement long-term prevention programs which affect the entire family.

**Keywords: postural body defects, electronic devices use**

## Medical university students' point of view on physiotherapist's profession

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**Introduction:** Society's increasing needs in healthcare, physiotherapist profession's law regulation and beliefs according to it are a premise of studies aiming to examine position of this profession in social view. Medical services market is formed by needs as well as opinions. People connected with healthcare might have important influence on creating an image of physiotherapist's profession.

**The aim:** The aim of the study was to research on the medical university students' view on physiotherapist's profession.

**Methods & Materials:** 215 students took part in the research: 183 women (85,12%) and 32 men (14,88%) aged 18-27 ( $\bar{x}=21,63$ ;  $SD=1,47$ ) including cosmetology, medicine, dietetics, dentistry, midwifery and nursing students. Method used for the research was the anonymous questionnaire consisting of metrical part and closed questions connected to the research problem.

**Results:** Only 14% of the respondents have never had any thoughts about physiotherapy while 18% thought about it quite often. Less than 40% of students define their knowledge about said profession as good or very good. It is gained mostly by interpersonal contacts (45,11%) and in the least from the university lectures (20%). According to respondents the most valuable attributes are abilities (41,40%) and the least is empathy (3,72%). They classify physiotherapist's job as rather effortful (66,05%) with average profitability (68,98%) and with rather low social prestige (49,3%).

**Conclusions:** Medical university students have average knowledge of physiotherapist's profession. Studies do not develop knowledge in this topic. There is a prevailing view that this profession is effortful, social prestige of it is rather low and profitability is average.

**Keywords:** profession, physiotherapist, views, students

## Physical activity and its determinants and consequences in elderly people inhabiting rural areas of Śląsk Cieszyński

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Introduction - Physical activity is an important component of lifestyle. Its level during ontogeny is variable with tendency to decrease. The quality of life of elderly people may be related to a level of physical activity.

The aim of the study was to evaluate level of physical activity in elderly people and which factors had an impact on physical activity and explored health benefits of physical activity.

Materials and methods - 85 older adults: 58 female (68,24%), 27 male (31,76%) aged 55-87 ( $x=67,59$ ;  $SD=6,91$ ) were examined using: a demographic questionnaire (age, sex, level of education, marital status, way of living, morbidity) and two standardised questionnaires: The Modified Baecke Questionnaire and the SF-12.

Results - Level of physical activity was diversified. HPI ranged from 0,20 to 15,8 ( $x=4,46$ ). Self-reported health status for FKZ ranged from 3,33pt to 95,33pt ( $x= 57,0$ ) for PKZ ranged from 16,66 to 100pt ( $x=73,09$ ). Gender differentiation was found only in household chores indicator ( $p= 0,0001$ )- higher activity of woman. Other indicators, FKZ and PKZ were not determined by gender. No correlations were found between age and activity ( $r=0,22$ ). Educational level differentiated only FKZ, marital status and way of living didn't differentiate the study population. HPI was positively correlated to FKZ and PKZ.

Conclusion - Physical activity and self-reported health status of older adults are very diversified. Women are more active in household chores. The age, level of education, marital status, way of living are not associated with the level of physical activity and self-reported health status. General physical activity has a positive effect on self-reported health status.

**Keywords: elderly, activity, self-reported health status**

## Hand dysfunctions among musicians

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Introduction - Musicians are at high occupational risk. It is associated with hours of exercise and concentration. They hold instruments in an unnatural and forced position. Musicians often repeat the same moves many times and these moves involve all the time the same muscles and joints. It is the reason for the formation of an overload and dysfunction within these body parts.

The aim of this study was to find out the number of musicians experiencing upper limb dysfunction due to playing the instrument. Also the aim was to check whether this dysfunction also appears during daily activities and physical activity.

Methods & Materials Necessary information was obtained by a self-prepared questionnaire. The questionnaire was given to 75 musicians between the age of 16 and 64, students of the Academy of Music, employees of NOSPR and many other artists.

Results 45,33% do not have a hand injury but still they experience a hand dysfunction while playing the instrument and in everyday life. The ailment gets worse while musicians play the instrument and this problem affects 40% of the respondents. 34,66% of musicians are physically active and among 16% of them hand dysfunctions also appears during physical activity. Rehabilitation was effective among 85,71% of musicians and patients saw the improvement and the ailments in the upper limb decreased.

Conclusions Most musicians have a hand dysfunction, although they did not experience any trauma in their lives. Most dysfunctions were observed in the joints of the wrist and shoulder and they are connected with pain, stiffness and muscle weakness in the upper limb. Musicians who went to a rehabilitation found it effective and saw the improvement.

**Keywords: musicians, hand dysfunctions, physiotherapy**

## **Knowledge of ergonomic rules, versus health and work comfort of primary school teachers**

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Work is very important part of personal development, part of society and individual organization owing to the fact that it takes 2/3 of adult life. Accordingly, work is particular form of human activity. The purpose of the ergonomics has huge impact on work quality and healthiness of employees. Not complying with appropriate rules can cause in severe consequences, which can affect in further work practice and private life of jobholders. Purpose of the research was to determine the teacher's knowledge about the rules of validated work ergonomics and also frequency and intensity of occurrence of vertebral column pain afflictions, among primary teachers from countries. Methods and content - 20 teachers currently working in primary schools have taken part in the study. The research utility was authorial questionnaire, it consisted of 30 occlusive questions. Results. According to subjective answers of teachers, about 60% interviewees don't know all of the rules of ergonomics at work. Most of educators have been diagnosed with afflictions of respective spine segments. About 45% of interviewees were coming with some blood system problems. Teachers aware of benefits coming from adherence to ergonomics rules, mostly confer to not having any pain afflictions from muscular skeleton system. Conclusion - Knowledge and adherence to ergonomics enhances teachers comfort during work and conduce to better state of being.

**Keywords: ergonomics, primary teachers, pain**

INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF NEONATOLOGY**



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## Evaluation of complications in the early adaptation period of diabetic mothers' neonates

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**INTRODUCTION:** Diabetes is one of the common complications during pregnancy. Insulin-dependent diabetes, lasting from childhood, is an outcome of 0,5% of pregnancies, while significantly more pregnant women is diagnosed with gestational diabetes. It is believed to be a risk factor of more frequent occurrence of neonatal complications including: respiratory distress syndrome, congenital infection, hyperbilirubinaemia, and metabolic abnormalities.

**AIM OF THE STUDY:** The aim of our research was to present the most common complications in the early adaptation period of diabetic mothers' neonates.

**MATERIALS AND METHODS:** Retrospective research included 222 neonates of mothers with gestational diabetes that were hospitalized in the Neonatal Unit in Katowice from 2009 to 2017. The information about parents' demographic profile, perinatal period and complications after childbirth was obtained. In addition, the results of diagnostic tests and imaging examination of neonates were analyzed.

**RESULTS:** In the study group 199 (89,64%) newborns were born by caesarean section and 23 (10,36%) by natural labour. The most common indication of urgent caesarean section was the danger of fetal asphyxia (16,16%). Complications in the early adaptation period occurred in 44,1% of neonates and hyperbilirubinaemia was the most frequent (55,1%). Among the developmental anomalies, the most common was the congenital heart disease - 10.8% of newborns.

**CONCLUSIONS:** Due to the higher risk of numerous complications in the early adaptation period, diabetic mothers' children should be given special care, prolonged adequately to the neonate's health condition.

**Keywords:** gestational diabetes, complications, early adaptation period, hyperbilirubinaemia

## **Connection between lenticulostriate vasculopathy (LSV) prevalence and maternal, perinatal as well as neonatal risk factors**

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**INTRODUCTION** Lenticulostriate vasculopathy (LSV) is a visible alteration of brain, which appears as echogenic spots in arteries of thalamus and basal ganglia, commonly detected on routine brain ultrasonography (BUSG) in neonates. LSV is often linked to various abnormalities, but clinical meaning still remains unclear.

**THE AIM** The aim of this study was to determine if there is any association between LSV prevalence and maternal, perinatal, neonatal and BUSG characteristics.

**METHODS & MATERIALS** Retrospective study included 48 neonates with LSV hospitalised in Neonatal Unit between 2014 and 2016. We analyzed growth parameters, prevalence of perinatal and maternal risk factors, congenital infections and LSV location, BUSG defects, as well as pulsatility index (PI) and resistance index (RI) in anterior cerebral artery (ACA).

**RESULTS** Research group contained 37,5% neonates from first pregnancy and 43,8% from second. LSV was observed majorly in males (62,5%), bilaterally (64,6%) and mostly (81,3%) isolated in thalamus. In our study, 85,2% patients presented at least one other brain abnormality, where the most frequent were choroid plexus cysts (40,8%). Moreover, we observed maternal medication intake during pregnancy (20,8%) and urinary tract infection (UTI) (16,7%). The alterations were observed in values of ACA PI and RI in relation to Apgar score. Research revealed correlation between Apgar score and head circumference and ACA PI and RI values.

**CONCLUSIONS** The most frequent LSV location was thalamus. LSV was associated with maternal medication intake and UTI during pregnancy. Our study can confirm the relation between LSV and artery calcification already known in literature.

**Keywords:** lenticulostriate vasculopathy, LSV, brain ultrasonography, thalamus, pulsatility index, resistance index, neonatology

## **Evaluation of progress of the Department of Neonatology from Woman and Child Health Center of the Municipal Hospital in Zabrze in the first two years of its functioning (1.11.2014-1.11.2015/1.11.2015-31.10.2016)**

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On 1.11.2014 a new medical center – Woman and Child Health Center of the Municipal Hospital in Zabrze was open. Since 2015, the center has been classified as a second-class reference hospital.

Evaluation and comparison of elected parameters referring to hospitalized newborns during the first and second year of the functioning of the department (2014-2016).

Retrospective analysis was performed on 3156 newborns – 1384 born in the first year and 1781 in the second year. Data is based on General Ledger of the Ward and in the elected cases – on medical history of the newborn.

Comparative analysis of 3156 hospitalized newborns showed that the number of children on the Ward increased by 29% in the second year of its functioning. In the first year 66,4% of women in labour were coming from Zabrze, however in the second year it was only 52%. During these two years, the majority of children were from I pregnancy. The number of C-sections decreased from 45,5% (2014-2015) to 41,8% (2015-2016), while water births increased to 2,13%. In both years nearly 2% of parents rejected vaccinations. 62 (4,48%) children in the first year and 48 (2,69%) children in the second year required transmission to the specialist centres. No fatalities were noted.

Woman and Child Health Center of the Municipal Hospital in Zabrze plays a major role in taking care over pregnant women and newborns in the region, which is confirmed by the fact of increasing number of hospitalized children. Newborns hospitalized in 2015 and 2016, in comparison with those from 2014 and 2015, had increased birth weight and foetal age. Number of C-sections has decreased during the second year of functioning of the Ward.

**Keywords: neonatology, Woman and Child Health Center of the Municipal Hospital in Zabrze**

## Is oligohydramnios associated with adverse perinatal outcome?

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**INTRODUCTION** - Amniotic fluid is necessary for proper growth and fetal development. Oligohydramnios (OH), defined as AFI<5 cm, has been associated with adverse pregnancy outcomes, i.a. perinatal death, fetal distress in labor and poor infant condition at birth. Incidence of OH varies between different studies with reported incidence of 0,5–5%.

**THE AIM** - Aim of our study was to evaluate influence of oligohydramnios on early adaptative period in late-preterm and full-term neonates.

**MATERIALS & METHODS** - In this retrospective observational study medical records of pregnant women and neonates born at 35-41 Hbd were reviewed. Based on AFI, patients were divided into oligohydramnios group (AFI < 5 cm; n=87) and control group (AFI > 5 cm; n=48). Demographic and perinatal data, as well as incidence of complications in early neonatal period, such as glucose metabolism disturbances, frequency of intrauterine growth restriction (IUGR), respiratory insufficiency, congenital infection and pathological jaundice were evaluated.

**RESULTS** In our study, 47% of neonates from OH pregnancies were late-preterm and 53% were full-term. In late-preterm neonates we observed significant differences in the frequency of IUGR between oligohydramnios and control group (41,5% vs 5,9% respectively;  $p<0,05$ ). Similar differences were noted in full-term newborns; IUGR were observed in 34,8% in OH group and none of the patients from control group. Additionally, neonates with OH suffered more often from congenital infections, pathological jaundice and respiratory insufficiency.

**CONCLUSION** - The study showed that antepartum oligohydramnios is associated with adverse perinatal outcome, high frequency of congenital infection and IUGR in neonates.

**Keywords:** Oligohydramnios, neonates, IUGR

## **Clinical picture of Transient Tachypnoea of the Newborn (TTN) among infants born in 34-40Hbd**

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**Introduction:** Transient tachypnea of the newborn (TTN) is a common disease, which presents in the neonate as tachypnoea in the first few hours of life. It is usually a benign condition, however due to various signs of respiratory distress can be considered as a diagnostic and therapeutic dilemma to the clinician.

**The aim:** To present influence of gestational age on clinical severity of TTN, with emphasis on differences in clinical course.

**Material and methods:** Retrospective research included 115 neonates (73 males and 42 females) hospitalized due to TTN in the Department of Neonatology in Katowice from 2009 to 2016. Children were divided into 7 subgroups according to gestational age (34 to 40 weeks). The analysis of clinical course was based on laboratory test results, respiratory failure symptoms and performed procedures. Other abnormalities provoking similar symptoms were considered as exclusion criteria.

**Results:** Among the study group the symptom which mostly occurred was expiratory grunt (66,1%). Decrease of frequency of symptoms, described by Silverman Scoring System is related to higher gestational age of neonates. The results of arterial blood gas analysis showed increase of pCO<sub>2</sub> (> 48mmHg) in the 16,67% of the newborn, decrease of pO<sub>2</sub> (< 83mmHg) – 37% and pH (< 7,3) – 20,59%. However, it differs between analyzed subgroups. The most common treatment was passive oxygen therapy, especially among premature infants (34hbd in group of 75% newborn, 35hbd - 72,7%, 36hbd – 47,6%).

**Conclusions:** The study showed significant difference in clinical course between subgroups. It also revealed that sometimes neonates were demanding patients in the Department of Neonatology.

**Keywords:** TTN, newborns, severity

## Severe polycystic kidneys in neonate - case report

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Introduction - Potter's Syndrome is a rare congenital disorder seen more predominantly in males. It refers to a group of findings which are associated with the oligohydramnios due to renal failure in an unborn infant. It is characterized by the typical physical appearance of a foetus, which is associated with renal agenesis or polycystic kidneys with pulmonary hypoplasia. The affected children are usually stillborn or die shortly after birth due to severe respiratory insufficiency.

The aim – Case presentation of a preterm infant with Potter Syndrome. Case presentation A preterm, male twin born by emergency cesarean section at 30 GW with severe condition, presenting symptoms of circulatory failure and respiratory distress. Physical examination showed large abdominal circumference - 70 cm, dysmorphic facial features and short deformed chest, bony pelvis and cryptorchidism. Also noticed left sided torticollis and malformations of the limbs with joint contractures. As a result of developing multiple organ dysfunction syndrome, the boy died after 6 hours of life. The autopsy revealed congestion in many of organs and big cysts of both kidneys, covered by cuboidal epithelium.

Conclusion – Potter's syndrome refers to the typical facial appearance and associated pulmonary hypoplasia caused by lack of protection function of amniotic fluid. Ultrasonography checkup during the 1st trimester of pregnancy helps us to identify these pathology early which gives a chance to prepare mentally parents to termination of pregnancy.

**Keywords: Potter's Syndrome, oligohydramnios, Potter's facies, pulmonary hypoplasia**

## Assessment of morbidity and correlated factors in infants with gastroschisis in Silesian region

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**Introduction:** Gastroschisis (GS) is a defect of front wall of abdomen associated with displacement of organs outside abdominal cavity. According to Polish Register of Congenital Malformation incidence of GS was 1.5/10000 births in 2006. In Europe this rate amounts to 2.82 for years 2010-2014.

**The aim:** Assessment of morbidity and correlated factors in infants with GS in Silesian region.

**Materials and methods:** Retrospective analysis assumed 23 medical histories of infants born in Gynaecology and Obstetrics Clinic in Katowice in years:2009-2015 and treated in Surgery and Urology Department in USCHC due to GS. Evaluated: sex of child, number of pregnancies and deliveries, natal age in moment of delivery, pregnancy complications, diagnosis in a moment of delivery, birth weight, Apgar score in 1st and 8th minute, content of CE, maternal age.

**Results:** 23 deliveries took place by C-section, average in 35 hbd. 11 newborns were female and 12 were male. 21 women were primipara in the first pregnancy. Average birth weight was 2401g. Average maternal age was 21,6 years. In 7 cases pregnancy was complicated by genital tract infection, 5- urinary tract infection, 5- premature contractions, 2- respiratory tract infections, 2- aenemia, 2- bleedings, 1- pregnancy-induced hypertension. Median of Apgar score was 7 in 1st i 8th minute. In 5 infants appeared postnatal breathing disorders. GS contained intestines and also liver in 4 cases, spleen -1, kidney -1, urinary bladder -2, stomach -2, mesentery -4.

**Conclusions:** GS appears in equal incidence regardless of sex. Young maternal age, first pregnancy and delivery correlate with occurring of GS. GS increases risk of preterm delivery and postnatal breathing disorders.

**Keywords:** gastroschisis, newborn, postnatal outcome, preterm delivery



## Women's knowledge on natural breastfeeding

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**INTRODUCTION:** Natural breastfeeding is still the main method of nourishing neonates and infants in Poland and the awareness of possible merits of breastfeeding can contribute to improving the conditions for their proper psychomotor development.

**AIM:** Providing informations of women's knowledge and beliefs regarding breastfeeding.

**MATERIALS AND METHODS:** A survey was conducted among puerperae, both usual paper form given to women at obstetric wards as well as online version distributed within internet group for young mothers.

**RESULTS:** A total of 1059 completed surveys were obtained. Regarding 371 interviewees the labour took place in a hospital of 1st grade reference, 391 women gave birth in 2nd grade and 237 in 3rd. Most (65%) of women search the information on breastfeeding ahead of the labour. Interviewees most often pointed the Internet as the main source of knowledge (1st – 85%, 2nd – 85%, 3rd – 74%) with literature for future mothers taking a second place (1st – 28,5%, 2nd – 26%, 3rd – 41%). When asked about the merits of breastfeeding, mothers most often indicated the care for a child's health and development (94,6%) (1st - 92%; 2nd - 94%; 3rd - 96%), emotional bonding with a baby (86,9%) (1st – 86%, 2nd – 87%, 3rd – 85%) along with nursing being practical and convenient (62,6%) (1st – 61%, 2nd – 62%, 3rd – 67%). Additionally, as much as 96,8% of respondents claimed that the unique composition of colostrum has a fundamental importance in the early nutrition of a neonate

**CONCLUSION:** Women's knowledge on natural breastfeeding is satisfactory, a significant majority of mothers partaking in the survey pointed the merits of breastfeeding in early newborn stage.

**Keywords:** breastfeeding, nourishing patterns, infants

## **Influence of low-molecular-weight heparin prophylaxis on changes in uteroplacental blood flow in fetuses with IUGR and on neonatal outcome**

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**Introduction:** Heparin achieves its long-lasting anticoagulant effect by inactivation of factor Xa and thrombin. Heparin prophylaxis is applied not only in patients who undergo a surgery or oncological treatment but also pregnant women with indications for anticoagulation. However, studies of some authors were unclear about the impact of heparin on placental circulation and placental complications.

**Aim:** The aim of the study was to evaluate the impact of low-molecular-weight heparin prophylaxis on changes in uteroplacental blood flow in fetuses with IUGR and neonatal outcome.

**Materials and methods:** Medical histories of 126 patients with pregnancies affected by IUGR were analysed retrospectively. Study included 50 cases and divided them into two subgroups: subgroup 1 - pregnancies with IUGR and antithrombotic prophylaxis, subgroup 2 - cases of pregnancies with IUGR without administration of heparin.

**Results:** Pre-eclampsia was observed more often in subgroup 1 than in subgroup 2, respectively 36% vs. 12% ( $p=0.04$   $\chi^2$ ). Furthermore, body mass of mothers in subgroup 1 was higher than weight of mothers in subgroup 2, respectively 87.7 kg vs. 71.8 kg  $\pm$  8.21 ( $p=0.03$ ). In the research the blood flow in umbilical artery improved after given heparin - 75% before and 85% after administration of heparin ( $p=0.04$ ). Change of blood flow in the middle cerebral artery wasn't statistically significant. There were no significant differences between adaptation period parameters of neonates in both groups.

**Conclusion:** Prophylaxis consisting of low-molecular-weight heparin has got a beneficial impact on blood flow in umbilical artery but it does not influence neonatal outcome.

**Keywords:** heparin, placenta, IUGR, neonate

## Breast milk standard in feeding newborns and premature

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**Introduction.** With the increase in the percentage of premature births and problems with lactation for women who are mothers of premature infants is increasing demand for human milk and the need for milk banks is also increasing. Education of the public on the need for breast milk for babies born prematurely is reflected in a growing group of donors, and therefore better supply Milk Banks in Poland. Objective.

The aim of the study is to present institutions of breast milk banking and midwife opinion on the healing values of human milk and the functioning of the Polish branch of the Milk Bank.

**Material and methods.** A survey was conducted among 210 women delivered at the Center of Gynecology, Obstetrics and Neonatology in Opole - the hospital of III degree of referentiality, where from May 31, 2016 Human Milk Bank operates. The obtained results are preliminary reports. It is planned to balance retesting after one year of functioning of the institution.

**Results.** According to 97.6% of the respondents mother's milk is the most suitable food for the newborn, 77.1% of respondents expressed the opinion that milk has healing properties. The activities of Human Milk Bank in Poland, 65.7% of respondents knew. In the case of a shortage of food, to give your child milk from the Human Milk Bank said they would have 28.6% of respondents, 27.1% of women wouldn't give the child of such milk, while 44.3% had no opinion on the subject. Education significantly influences the decision to give the child milk from the bank ( $p = 0.004$ ).

**Conclusions.** Emerging in recent Human Milk Banks in Poland are proof of the high demand for human milk, which is standard in the nutrition of preterm infants. Investigation and analysis of the composition of breast milk supply allows the target infants who were born prematurely, according to the order neonatologist, who plan nutrition therapy. The study indicates a deficit of public awareness in the field of Milk Banks and appropriateness of supply.

**Keywords:** Human Milk Bank, nutrition, premature, nutritional therapy

## A newborn as an interdisciplinar patient

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Nowadays more and more pregnancies end premature birth. Thanks to achievements of modern medicine and doctors co-operation from various fields more premature babies have a chance to survive. 37-year old woman in 2nd pregnancy in 25th week was admitted to the Clinic of Gynecology and Obstetrics because of vaginal bleeding. Caesarean section was taken due to peell of placenta. Incision was preceded by 20 hours of passing out amniotic fluid. Before the delivery mother has received steroids to accelerate lung maturation in the newborn. Infant female, 690g, Apgar 4/6/6/6 points. Intubated in the delivery room, connected to the respirator. In the next days of life intrafontanelle USG was performed-suspicion of IVH. Initially without cardiac disorders. In the following days of her life systolic murmur and features of pulmonary hypertension. Cardiac consultation-diagnosis PDA with characteristics of high resistances of pulmonary-ligation of PDA. Surgical consultation due to a lack of stool and deteriorating condition. Intestinal transit was taken, a high-obstruction of the digestive tract-exploratory laparotomy.19th day of the life-deterioration of kidney function. The next days the patient was hospitalized on pathology department gastrostomy-fed by gastrostomy. In ophthalmic consultation ROP-laserotherapy was done. This case draws attention to the variety of dysfunctions in the preterm intrauterine fetal asphyxia. An extreme preterm is an interdisciplinary patient, whose later quality of life depends on the cooperation of a number of specialists and the appropriate conduct of the ward NICU and rapid treatment and prevention of complications resulting from prematurity.

**Keywords: interdisciplinar newborn intrauterine fetal asphyxia**

## Prediction of severe ROP using the WINROP algorithm in a birth cohort in Malopolska

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**Introduction:** Retinopathy of prematurity (ROP) is one of the leading cause of blindness in childhood. Accurate diagnosis and treatment are essential for prevention the loss of vision. WINROP is an online monitoring system, predicts the risk of proliferative ROP based on gestational age, birth weight, and body weight gain.

**Aim:** To validate diagnostic accuracy of WINROP algorithm for detection of proliferative ROP in cohort of Polish, high-risk preterm infants.

**Materials and Methods:** The retrospective analysis included data obtain from neonates born before 32 weeks of gestation (GA) admitted to the NICU of Chair of Pediatrics from 2013 to 2015. Daily body weight (BW), clinical diagnosis of ROP and treatment date were set in WINROP. Surveillance system evaluated low-risk alarm or high-risk alarm for each infant. The analysis of the clinical diagnosis was performed.

**Results:** A total of 79 patients were included for the study. High-risk alarm received 37 patients and 22 developed sight threatening ROP. For 42 infants low-risk alarm occurred. Five of them were treated for ROP. The sensitivity of the WINROP online system was found to be 81,5% (95% CI, 61,9-93,7), and specificity was 71,2% (95% CI, 56,9- 82,9). The negative and positive predictive values were 88,1% (95% CI, 76,7- 94,3) and 59,5% (95% CI, 48-69,9), respectively. WINROP alerted about the risk of developing ROP 35 (-8-57) days before an ophthalmologist confirmed it in examination.

**Conclusions:** WINROP is useful for identification the risk groups of ROP. However, the algorithm does not replace eye examination because some infants with advanced ROP could be omitted.

**Keywords:** Retinopathy of prematurity, WINROP, screening tool

INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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

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## **Assessment of the knowledge level of the non-technical skills among final year students of the Faculty of Medicine of the Medical University of Silesia in Katowice**

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Non-technical skills (NTS) include communication skills, teamwork, leadership, decision-making and situational awareness. Lack of those competences corresponds to nearly 70% of the medical errors. The research confirms the urgency and the demand for development of NTS.

Analysis of the knowledge level of the NTS and their usage during medical simulation among students of SUM.

Prospective survey research was conducted among 299 medical students. Authorial questionnaire included 42 questions. Despite 87 students participating, 8 were excluded, leaving 79 surveys submitted for analysis.

66% of respondents were women. The average age was 25.2. 42% of interviewees made 6-10 simulations during their studies and 11% completed more than 20. The majority believes that medical simulation can effectively imitate real-life patient care. Full control over the team was declared by 16% of the leaders compared to 4% awareness of patient's condition. 22% of team members claimed that they reported to the leader that commissioned task was completed, although 97% marked the correct description of closed loop communication structure. The idea of NTS was known to 32%. 12% of respondents believe that the leader should criticize team members during simulation and 87% think that correction of mistakes must take place.

The number of simulations conducted during the studies is insufficient. Most of the students did not refer to the idea of NTS, yet were able to correctly point the key elements of the leader's and team members' work. Nevertheless, this knowledge did not allow them to apply their skills to simulation properly.

**Keywords: non-technical skills, leadership, followership, teamwork, medical simulation, simulation in healthcare**

## **Prognostic value of the Acute Physiology and Chronic Health Evaluation (APACHE) II, Simplified Acute Physiology Score (SAPS) III and Sequential Organ Failure Assessment (SOFA) scales in predicting functional status and quality of life in intensive care unit (ICU) survivors**

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A notable percentage of patients require medical care after discharge from the ICU. Data on risk factors associated with decreased functional status in ICU survivors is scarce. Commonly used scoring systems were developed to predict in-hospital mortality. Their value in predicting other outcomes is unknown.

To determine usefulness of APACHE II, SAPS III and SOFA scales in predicting long-term outcomes in ICU survivors.

The study included 258 patients admitted to the university ICU in 2015. APACHE II, SAPS III and SOFA scales were calculated on admission. 62 survivors were contacted by phone and 47 (32F/ 15M; aged 20-80y) agreed to participate. Functional status and quality of life (QoL) were evaluated using Barthel Index (BI), Duke Activity Status Index (DASI) and WHOQOL-BREF questionnaire.

Median APACHE II, SAPS III and SOFA scores were: 6 (IQR 4.25–9.75), 16 (IQR 9.25-24), 2 (IQR 1-4.75) points, respectively. Median BI was 95 (IQR 90-100) and DASI was 9.3 (IQR 4.5-13). QoL scores for the physical (D1), psychological (D2), social (D3) and environmental (D4) domains were 63 (IQR 50–69), 69 (IQR 56–70.5), 75 (IQR 69–81), 75 (IQR 67.5–81), respectively. A statistically significant correlation was found between SAPS III and BI ( $R=-0.44$ ), DASI ( $R=-0.48$ ), D3 ( $R=-0.26$ ) and D4 ( $R=-0.4$ ). There was also a statistically significant correlation between APACHE II and both BI ( $R=-0.30$ ) and DASI ( $R=-0.33$ ). No correlation has been found between SOFA scores and analyzed outcomes.

QoL and functional status after discharge from ICU is acceptable. SAPS III seems more accurate for predicting soft outcomes in ICU survivors.

**Keywords: SOFA, SAPS III, APACHE II, ICU survivors, ICU outcomes**

## **Intraoperative blood pressure variability under general and total intravenous anaesthesia in patients with hypertension**

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Patients with hypertension (HT) are more prone to changes in the values of blood pressure (BP) when under anaesthesia.

The aim of the study was to compare the variability of BP in hypertensive patients and patients without HT, under anaesthesia.

Intraoperative anaesthesia records of 30 patients with HT and 18 patients without HT were analysed. All of the patients underwent neurosurgery in November and December 2016. Patients who were under total intravenous anaesthesia or general anaesthesia during the surgery were included. Exclusion criteria were positions other than supine or prone position, operation on the hypophysis, placement of ventriculoperitoneal shunts or extraventricular drain. BP values recorded during the induction, maintenance and emergence from anaesthesia were compared.

The average difference between the lowest systolic BP during the induction and the lowest systolic BP during the maintenance was 11,7 mmHg in patients with HT and 11,4 mmHg in those without HT; the mean difference in the lowest diastolic BP was 10,8 mmHg and 8,6 mmHg, respectively; the difference was not statistically significant ( $p>0,05$ ). The mean differences between the max. and min. systolic BP values were 43,5 mmHg in HT patients and 30,6 mmHg in patients without HT ( $p=0,02$ ); in case of diastolic BP it was 25,3 mmHg and 16,7 mmHg ( $p=0,01$ ), respectively. The difference in the change in BP after the induction was higher in patients with HT, however it was not statistically significant. The mean difference between the highest and lowest BP values during maintenance was significantly bigger in patients with HT.

The results show a greater difficulty in maintaining stable BP in HT patients.

**Keywords: Blood pressure variability, general anaesthesia, hypertension, neurosurgery**

## IRRIV score in critically ill patients with acute kidney injury (AKI)

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The need of renal replacement therapy (RRT) implementation in critically ill patients is usually considered based on clinical and laboratory indications, including serum creatinine (sCr) level. IRRIV score was recently established to enable RRT prognostication AKI in patients.

The aim was: (1) To assess the usefulness of IRRIV in prediction of RRT implementation in patients with elevated sCr concentration. (2) To verify the score's utility in patients presenting classic indications for RRT. (3) To establish if IRRIV predicted the patient's prognosis (length of ICU stay, mortality).

This retrospective study covered 42 consecutive critically ill patients (25 men/median age 60y) hospitalized from 01.2015 to 02.2017 with sCr>3,5 mg/dl (G1). We additionally analyzed data covering 17 subjects who underwent CRRT regardless of sCr level (G2). Demographic and clinical data was retrieved from medical records. IRRIV score was calculated based on data from the first day post-admission.

Mean SOFA on admission was  $2.5 \pm 1.1$  (G1) and  $1.1 \pm 0.7$  (G2) points. Mean IRRIV was  $5.2 \pm 1.7$  (G1) and  $4.4 \pm 1.7$  (G2) points. In G1 IRRIV failed to predict the need of RRT (AUC=0.593; 95%CI 0.431-0.742). In G2 IRRIV did not differ between groups defined by indications to RRT implementation. No correlation between IRRIV and LOS was found (G1:  $R=-0.17$ ;  $p=0.3$ / G2:  $R=-0.21$ ;  $p=0.4$ ). IRRIV failed to predict in-hospital mortality (G1: AUC=0.599; 95%CI 0.436-0.747/ G2: AUC=0.533; 95%CI 0.281-0.773).

Based on regional data, IRRIV score cannot be applied neither to predict the need of RRT nor the prognostication in patients with AKI.

**Keywords:** RRT implementation, IRRIV, AKI

## Levels of serum lactates and their dependence with treatment outcomes of critically ill patients in the ICU

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The increase of lactate levels is observed in cases of severe hypoxaemia.

We aimed to assess the correlation between serum lactate levels and outcome in critically ill patients.

All patients treated in the ICU of the Silesian Centre for Heart Diseases in Zabrze in 2015-2016 were examined (n=258). Patients who did not fulfill the criteria of the study were excluded. Data of 240 patients was analyzed. In each patient, the highest level of lactate was recorded in day 1, 2 and 3 following admission to the ICU. The mean lactate values and changes of lactate levels were compared between the first and third day.

Serum lactate concentrations in the first 3 days of treatment were significantly higher in patients who died. In the first day, nonsurvivors had higher worst lactate concentrations when compared to survivors (3,7 vs 2,8 mmol/l,  $p<0,001$ ). The same was true for a second day and the third day (3,3 vs 2,0  $p<0,001$  and 3,4 vs 1,6  $p<0,001$ , respectively). In the survivors, a statistically significant decrease in lactate concentrations was observed between the first and third day after admission to the ICU – from 2,8 to 1,6 mmol/l ( $p<0,001$ ). In the non-survivors, the lactate concentrations remained high.

Serum lactate concentrations in patients treated in the ICU are high ( $>2$  mmol/l) and are significantly higher in non-survivors. Decrease of concentrations after the first 48 hours of treatment in the ICU predicts successful outcome, regardless of the cause of admission to the ICU.

**Keywords:** serum lactates, critically ill patients

## **Analysis of injuries in trauma patients suffered in road accidents on the basis of the results of the whole body computed tomography**

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The whole body computed tomography (WB-CT) is a highly sensitive and specific examination ensuring quick assessment of damages, which decreases time necessary to implement right clinical management of multiple trauma patients.

The aim of the study was an analysis of types and location of injuries in trauma patients after road accidents based on the WB-CT and usefulness of the WB-CT examination.

The retrospective analysis of case histories and WB-CT scans of 133 consecutive patients (105 male, 28 female, average age 40,5, median age 35) who were admitted to the ED at the Medical University of Wrocław from 10.2015 to 10.2016 because of trauma. WB-CT were performed in the Radiology Department by the 64-row CT scanner LightSpeed VCT. A thickness of one slice was 0,6mm.

After the analysis of 133 WB-CT examinations 90 patients after road accidents were chosen (67,6%). In conducted WB-CT examinations 360 injuries (av. 4 injury per one patient) were detected. There were 60 (66,7%) patients with polytrauma, 13 (14,4%) with monotrauma and 17 (18,9%) revealed no injury. Injuries most frequently involved thorax (31,1%), most of which was lung contusion (42%). Next most common locations of injuries were: head (27,5%) and pelvis (11,7%). 21 (23,3%) patients had detectable alcohol levels in the blood.

The majority of posttraumatic patients were referred to the WB-CT because of the road accident. Injuries of the thorax were the most frequent. The WB-CT is a reliable examination although it exposes to the high radiation dose and almost 1/5 of patients revealed no injury.

**Keywords:** road injuries, whole body computed tomography, polytrauma

## Renal replacement therapy and mortality among patients after cardiac surgery

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Kidney failure is a severe complication after cardiac surgery – some cases require implementing renal replacement therapy (RRT). The occurrence of this clinical condition may have a crucial role in postoperative course.

A retrospective assessment of patients who demanded hemodiafiltration (HDF) in the Intensive Care Unit after cardiac surgery. Confrontation the results with literature data.

Out of all patients, who underwent cardiosurgical procedure in Silesian Center for Heart Diseases in Zabrze in 2016 (n=1877), 73 patients required RRT (4.00%). Patients who had orthotopic heart transplant (OHT), extracorporeal membrane oxygenation (ECMO) or mechanical circulatory support with pneumatic pump as a primary procedure (n=17) were not assessed. Final analysis covered 56 patients with RRT (31 men (55.36%); Me=69 years old, Q1=62.5, Q3=75).

In the RRT group, patients underwent coronary artery bypass surgery (n=23, 41.07%), cardiac valve surgery (n=12, 21.43%), mixed procedures (n=17, 30.36%), and others (n=4, 7.14%). Median length of stay (LOS) was 10 days (Q1=6, Q3=22.5). In-hospital mortality in the assessed group reached 80.36% (n=45).

Occurrence of kidney failure demanding hemodiafiltration during postoperative course is a strong, adverse prognostic factor ( $p < 0,0001$ ). High mortality among patients with renal replacement therapy is comparable with literature data.

**Keywords: cardiac surgery, kidney failure, renal replacement therapy**

## Accidental intraoperative hypothermia

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Accidental intraoperative hypothermia is one of the most frequent disturbances of homeostasis of the perioperative period. It may lead to inadequate pain control or generate further complications.

To evaluate intraoperative hypothermia, its frequency, basic risk factors and consequences.

Study group comprised 30 subjects aged  $58 \pm 13$  y. Internal (IN) and external (EX) body temperature was measured every 30 minutes. Postoperatively, patients were evaluated with the use of Aldret scale and Song criteria. Pain control, shaking, chills were monitored.

Mean time of surgery was  $147 \pm 98$  min. Temperature in the operating room was  $23 \pm 1^\circ\text{C}$ . Warming mattress was used only in 5 cases, warm fluids in 15 patients. Baseline IN was  $36.4 \pm 0.5^\circ\text{C}$ , EX:  $35 \pm 1.4^\circ\text{C}$ . There was subsequent drop in the IN (min IN was  $36.0 \pm 0.6^\circ\text{C}$  at 90 min; median drop  $0.3^\circ\text{C}/\text{h}$ ). No EX fall was observed ( $p > 0.05$  for trend). No correlation between IN and EX was noticed for all time points. The highest IN drop was found if patients were operated in the sitting position ( $p = 0.08$ ). Median scoring in Aldret scale was 10 and in Song 14 points. Inadequate pain control declared 6 subjects, shaking was present in 4 and chills in 6 patients, with no association with IN drop ( $p = 0.1/p = 0.8/p = 0.3$ ).

Assessment of accidental hypothermia should be performed with the measurement of IN in all patients. Implementation of easy-to-use and inexpensive methods of warming should be demanded to prevent this complication.

**Keywords:** perioperative hypothermia, thermoregulation, postoperative complications



## Usefulness of the ratio of white blood cells to platelets (WBC:PLT) in the intensive care unit (ICU) patients with sepsis

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There are several clinical and laboratory predictors of sepsis, including findings from whole blood cell analysis and inflammatory markers. Some of them may also enable prognostication.

To investigate the usefulness of WBC:PLT ratio in ICU patients with sepsis.

Retrospective analysis covering 58 patients (31F/27M; 56±20y) hospitalized in 2016 was performed. Necessary data was retrieved from medical records. WBC:PLT ratio was assessed 1 day prior and on the day of sepsis manifestation. Sub-analyses for LYMP:PLT and NEUP:PLT ratios were also performed.

There were 55% of G(-)-related and 45% of G(+)-related cases of sepsis. The origin of sepsis was blood-stream infection (38%), pulmonary infection (33%), abdominal infection or bacterial translocation (24%) and urosepsis (5%). In-hospital mortality reached 54%. Median (IQR) ratios of WBC:PLT, LYMP:WBC, NEUP:PLT on a day prior sepsis occurrence were: 0.04 (0.03; 0.08), 0.03 (0.02; 0.08) and 0.38 (0.24; 0.58). CRP was 58.2 (23; 179) mg/l. On a day of sepsis manifestation the indices were 0.05 (0.03; 0.11), 0.03 (0.02; 0.06) and 0.42 (0.29; 0.75), with CRP of 164.5 (90; 224) mg/l. WBC:PLT ratio failed to predict type of bacteria causing sepsis (ROC=0.512-0.513;  $p>0.05$ ), antibiotic resistance (ROC=0.527-0.535;  $p>0.05$ ) and sepsis origin ( $p=0.5-0.9$ ). There was no correlation between WBC:PLT and CRP ( $R= -0.07$  to  $0.11$ ;  $p>0.05$ ). WBC:PLT ratio a day before sepsis but not on a day of its manifestation predicted in-hospital mortality (ROC=0.661;  $p=0.04$  and ROC=0.532;  $p>0.05$ ).

WBC:PLT ratio cannot be used in septic patients to identify its possible reason but can be useful in prognosis.

**Keywords:** sepsis, prognostication, WBC:PLT, ICU

## The use of albumin on critically ill patients treated in the intensive care unit

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There are few studies suggesting that albumin may be beneficial in critically ill patients, however their effects have not been fully established.

Our aim was to examine the influence of albumin administered to critically ill patients at ICU.

All patients treated in the ICU of the SCHD (n=258) in the years 2015-2016 were examined. We excluded patients who did not fulfill the criteria of the study. Data of 244 patients has been analyzed. Patients were divided up into a group where albumin was used during the first 7 days of their stay and in the second group, albumin was not used at all during the same period. For each patient there was a calculated amount of transfused albumin. The entire population of patients was divided into a group of patients who were discharged or who died. In both groups the percentages of patients receiving albumin and the mean amount of albumin were compared. Chi2 test with Yates correction and Mann-Whitney test were used. For all calculations it was assumed that the statistical significance was at  $p < 0.05$ .

In the examined population, 119 patients died in the ICU (48.8%). The use of albumin was more frequent in the group of patients who died (39.7% vs. 19.2%,  $p < 0.001$ ). The mean dose of albumin per patient was much higher in the group of patients who died in the ICU (28.7 vs. 16.2,  $p = 0.01$ ).

The use of albumin is associated with higher mortality in critically ill patients treated in the ICU.

**Keywords:** albumin administration, critically ill patients, ICU

## Evaluating the training accuracy of multivenous iv-training arms by certified nurses

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In the recent years, a growing trend to use advanced patient simulators for medical training continues to develop. While many papers confirm that they bring several benefits to medical students and professionals' schooling, data on their accuracy and fidelity in emulating a real patient is scarce.

The aim of our work is to evaluate the accuracy of multivenous iv-training arms and to assess their suitability for medical training of future paramedics, nurses and doctors.

In our research, we used two Ambu IV Trainer iv-training arms. A survey consisting of 6 questions was prepared to be answered by nursing staff from various departments, including the Intensive Care Unit who were asked to start an IV line on the training arm simulator. Our work had 50 respondents. Every question was to be answered on a scale from 0 to 10, where 10 represents an accuracy corresponding to that of a human patient.

The overall fidelity of the simulator was evaluated at an average of 7.2. With an average score of 9.5, our survey revealed that the simulator's best feature was the possibility of emulating the preparation process preceding the i.v. line establishment. Compared to a human patient, it's worst quality with an average score of 6.8 was the simulator's skin. Asked if training on the iv simulator could completely substitute schooling on a human patient, the respondents rated this possibility with a 5.3 score.

IV-training arms are a useful tool in the schooling of medical trainees, but they differ significantly from a human patient. While their overall accuracy is good, there are certain elements that could still be improved for even better fidelity.

**Keywords: Medical Training, Medical Simulation**

## **Satisfaction with care and expectations regarding treatment of patients hospitalized and discharged from the intensive care unit (ICU): interviews with family members**

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Satisfaction with care is one of the major 'soft' measures of treatment effectiveness. It can be given by the patients or, in the critically ill subjects, more frequently is based on opinion of their family members. Coming up to the expectations of the relatives about treatment procedures and their efficacy is of some importance as well.

To evaluate satisfaction of family members of patients discharged from ICU and their expectations regarding treatment of their close relatives.

Data covering 35 patients hospitalized in 2015 were subjected to the analysis. 99 patients were contacted by phone calls. At least 3 attempts were made to gather information. Interviews were performed with family members of 35 patients. 'Family Satisfaction with Care in the ICU' questionnaire was applied.

The study group comprised 43%F and 57%M. Regarding satisfaction with care, 74% of responders assessed the overall care as excellent or very good. 91% felt sufficient emotional support from the personnel. Excellent or very good level of competence of the nursing staff was declared by 79% of responders. The adequate ratio for the doctors was 89%. The overall level of treatment was assessed as excellent or very good by 83% subjects. Communication between families and personnel was optimal (91% of positive answers) as well as alertness to give the information about patient's status (94%). More than half of the family members felt involved in decision making regarding treatment of their relatives.

The level of satisfaction with care is almost complete and most expectations regarding treatment of the ICU patients are met from the view of their relatives.

**Keywords: satisfaction, expectations, family members, Intensive Care Unit**

## **Influence of fluid balance and type of administered fluids on outcomes in critically ill patients**

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The impact of fluid management on mortality in ICU patients is an important issue.

We aimed to assess of the relation between fluid balance, type of infused fluids and outcome in ICU patients.

We retrospectively analyzed the population of 244 patients treated in the ICU at the Silesian Centre for Heart Diseases in Zabrze in the year 2015 and 2016. The overall amount of administered fluids (divided into crystalloids and colloids) and fluid balance during the first week of ICU stay was analyzed in each patient. Descriptive statistics, Fisher's exact test and Mann-Whitney test were used.  $P < 0,05$  was considered statistically significant.

174 patients (71,3%) received both crystalloids and colloids, while 70 patients (28,7%) received crystalloids only. Patients who received crystalloids only had significantly lower fluid balance in comparison to patients with crystalloids and colloids during the first and second day of ICU stay (422 vs 1524 ml,  $p < 0,001$  and 497 vs 1015 ml,  $p < 0,001$ , respectively). Patients who received crystalloids only had a less positive net fluid balance during the first week of ICU stay (4741 vs 7976 ml,  $p < 0,001$ ). Nonsurvivors had a higher positive fluid balance in comparison to survivors on second and third day of ICU stay.

Maintaining a restrictive fluid balance has a positive influence on mortality in ICU patients. Avoiding colloid fluids may help to maintain a restrictive fluid balance and therefore improve the outcome.

**Keywords:** ICU, fluid balance, critically ill patients

## Prevalence of acute kidney failure and serum levels of creatinine as defined by KDIGO criteria in critically ill patients – influence of renal replacement therapy

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We aimed to assess serum levels of creatinine (SCr) in various stages of acute kidney failure (AKI) in critically ill patients and evaluate the influence of these levels and the use of renal replacement therapy (RRT) on mortality.

A retrospective cohort of 258 ICU patients in 2015-2016 was analysed. 154 patients with AKI were identified and divided into various groups according to KDIGO (Kidney Disease: Improving Global Outcomes) criteria.

Among all patients with AKI stage III who had baseline SCr levels above 353.6  $\mu\text{l/l}$ , 25 (67.6%) were treated with RRT. Mortality was not significantly different whether RRT was implemented or not (68% vs 50%,  $p=0.47$ ). RRT was used significantly in patients with AKI (46.1% vs 20.2%,  $p<0.001$ ). In a group of 25 patients in whom SCr reached 353.6  $\text{mmol/l}$  or more, 19 were treated with RRT within 24 hours, and in the remaining 6 patients RRT was initiated later during the ICU stay. Mortality was similar in both groups (68% and 67%). Mean SCr levels in patients receiving RRT were significantly higher than in the remaining population ( $163.2\pm 97.4$  vs  $124.0\pm 67.2$   $\text{umol/l}$  ( $p<0.001$ )).

The frequency RRT use in the ICU depends on the stage of AKI as defined by KDIGO criteria. The risk of death in patients treated with RRT remains very high and does not depend on AKI stage, nor its presence or absence at admission. The immediate administration of RRT does not reduce mortality among patients with very high levels of SCr, however due to a small sample size, further research in this field is required.

**Keywords:** AKI, creatinine, ICU, mortality

## Predictive value of APACHE II & III and SAPS II scores in a university intensive care unit: 12-month analysis

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There are several scoring systems commonly used for outcome prediction in the ICU setting. Their application in a local scenario usually requires validation to ensure appropriate diagnostic accuracy.

To assess whether APACHE II and III, and SAPS II predicts in-hospital and long-term mortality at the university ICU in a 12-month period.

Appropriate scorings of APACHE II, APACHE III and SAPS II, and their corresponding predicted mortality ratios were calculated based on data retrieved from medical records for 303 consecutive patients admitted to the 10-bed ICU in 2016. In-hospital mortality was recorded. Long-term mortality was calculated based on information taken from PESEL database.

Mean APACHE II, APACHE III and SAPS II were  $18\pm 9$ ;  $64\pm 35$  and  $42\pm 20$  pts, respectively. Predicted mortality for those scoring systems was  $32\pm 24$ ,  $26\pm 25$  and  $37\pm 29\%$ . Observed in-hospital mortality was 35.6%. During a median follow-up of 52 days mortality reached 17.4%. All systems predicted in-hospital mortality: APACHE II (AUC=0.783; 95%CI 0.732-0.828), APACHE III (AUC=0.793; 95%CI 0.743-0.838) and SAPS II (AUC=0.792; 95%CI 0.742-0.836), with the corresponding cut-off points of: 22, 66 and 46. All scorings predicted mortality after ICU discharge: APACHE II (AUC=0.712; 95%CI 0.643-0.775), APACHE III (AUC=0.721; 95%CI 0.653-0.783) and SAPS II (AUC=0.695; 95%CI 0.625-0.759), with the corresponding cut-off points of: 19, 48 and 29.

APACHE III is the most powerful tool in predicting in-hospital as well as long-term mortality in this local ICU.

**Keywords:** Intensive care; mortality; ICU; scoring systems; APACHE; SAPS

## Usefulness of Apfel score in predicting postoperative nausea and vomiting (PONV): single-center experience

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PONV are uncomfortable for patients, can prolong hospitalization and can lead to more serious complications, including inadequate pain control or respiratory failure. Accurately predicting which patients are at risk of PONV can help physicians decide when to recommend prophylactic antiemetics.

To verify whether Apfel score is useful in predicting postoperative nausea and vomiting.

Prospective observation covered 101 patients (54F; median age 64y; 51 ASA3+) who underwent surgery between 01.2017 and 03.2017 in a high-volume university hospital. Demographic and clinical data was recorded. Apfel score was calculated. PONV was considered the outcome.

Mean time of anesthesia was  $216 \pm 121$  min. Most patients ( $n=86$ ) underwent gastrointestinal surgery. Antiemetic prophylaxis was given to 68 persons. Median Apfel score was 2 (IQR 2;3). Apfel score of 4 pts was found in 14 subjects. PONV occurred in 9 patients. Although none of the individual components of the Apfel scale predicted PONV in bivariate comparisons, total score was useful in predicting PONV (AUC=0.734; 95% 0.636-0.817;  $p<0.01$ ). Apfel score was comparable between patients who received or not antiemetics ( $2.36 \pm 1.1$  vs.  $2.44 \pm 0.9$ ;  $p=0.7$ ). Antiemetic treatment in an insignificant way, by 65% reduced PONV occurrence (OR=0.35; 95% 0.08-1.4;  $p=0.1$ ).

Although Apfel score helps recognize patients at risk of PONV, identification if patients should receive prophylactic antiemetics needs further investigations.

**Keywords:** PONV, Apfel prediction



## Sleep quality in the intensive care unit (ICU) personnel: a pilot study

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Sleep disturbances are frequent in people working in the ICUs. Shift work, emotional tension and environment may cause sleep disorders.

To assess sleep quality (SQ) and its association with work-related factors in ICU staff.

18 subjects (7 doctors, 11 nurses) were asked about SQ and work-related factors with the use of Epworth Sleepiness Scale (ESS), Skala Jakości Snu (SJS) and 7-day sleep diary (doctors).

ESS was  $10 \pm 5$  pts with no difference between doctors ( $13 \pm 6$ ) and nurses ( $9 \pm 5$ ) ( $p=0.2$ ). SJS was  $32 \pm 6$  pts with no difference between doctors ( $29 \pm 4$ ) and nurses ( $33 \pm 7$ ) ( $p=0.2$ ). Correlation between ESS and SJS was poor ( $r=0.28$ ). Mean number of working hours was  $206 \pm 77$ /month. Mean number of night shifts was  $7 \pm 3$ /month. There was no correlation between SQ and the number of night shifts ( $r=0.24$  ESS;  $r=0.4$  SJS) and days of work ( $r=0.1$  ESS;  $r=0.22$  SJS). Sleep environment and sleeping conditions had no impact on sleep quality. ESS ( $r=-0.55$ ) and SJS ( $r=-0.34$ ) negatively correlated with age. ESS ( $p=0.01$ ) was negatively associated with work experience (in years). Based on sleep diary: mean number of sleep quantity was  $417 \pm 51$  min/day, number of awaking episodes was  $3 \pm 2$ /week, number of working minutes was  $4171 \pm 171$ /week and median number of night shifts was 2. There was positive correlation between SQ and working hours per week ( $r=0.78$  ESS;  $r=0.73$  SJS) and numbers of night shifts ( $r=0.72$  ESS;  $r=0.82$  SJS). SQ was reversely related with sleep quantity ( $r=-0.96$  ESS;  $r=-0.74$  SJS). SJS ( $p=0.01$ ) but not ESS ( $p=0.2$ ) was related with self-assessed SQ.

SQ of the ICU personnel is satisfactory. However, burden of work may influence the results.

**Keywords:** sleep quality, sleep disorders, intensive care unit personnel

## **Following the safety rules by medical staff of anaesthesiology and intensive therapy**

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One of the key elements affecting the health of both patients and medical staff is to follow the safety rules. Compliance with established rules reduces the risk of accident and of occupational disease.

Aim of the study was to approximate the issues relating to compliance with safety rules by medical personnel departments of anaesthesiology and intensive care. The study attempted to determine whether factors such as age, work experience, or education have an impact on compliance with the rules.

A total of 218 analyzed anonymous author surveys in both paper and electronic form. Survey respondents in the paper was the medical staff (nurses), departments of anaesthesiology and intensive therapy working on five different wards in hospitals in Silesia. Replies were given in electronic form by staff departments of anaesthesiology and intensive therapy, via social networking sites.

The vast majority of medical personnel declared the proceedings comply with the rules. 61% of respondents have cut short nails, more than half of the respondents do not wear any jewelry during medical procedures and 47% wear personal protective equipment. More than 80% of the staff uses gloves for each medical treatment. As many as 96% of respondents know and use the principles of oxygen therapy. 90% of the staff had never been witnessed violating safety rules in a way which lead to a direct injury.

In hospitals the personnel and patient safety is a key role in both the treatment and recovery. Based on the study it can be concluded that the staff are aware and follow basic safety rules, however some areas still require improvement.

**Keywords: Safety rules, Anaesthesiology, Intensive Care questionnaire**

## **Medical Universities student's first aid knowledge**

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Basic life support consists of cardiopulmonary resuscitation (CPR) and, when available, defibrillation with automated external defibrillators (AED). The keys to survival from sudden cardiac arrest are early recognition and treatment. Self-possession and composure during emergency treatment can only be achieved through competent theoretical and practical training. Every year thousands of people die because of various injuries, car accidents and other emergencies. Those numbers could be much lower if only the witnesses of fatal accidents gave the victims first aid.

The purpose of the research was to test the level of knowledge among students of Medical Universities about first aid.

The students of Medical Universities participated in survey anonymously and voluntarily. They answered 11 single choice questions.

76% of interviewees had learnt about first aid, before they started studies on a medical subject and 37% define their level of knowledge as good.

The level of knowledge about rules of the first aid among students is acceptable. It is crucial to understand that first aid is effective only if the rescuer has the knowledge of cardiopulmonary resuscitation.

**Keywords: first aid, knowledge, medical students, basic life support**

## Invasive versus noninvasive hemodynamic monitoring- a comparison of available methods

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Pulmonary artery catheters (PAC) are the gold standard for hemodynamic monitoring. The LiDCOrapid System uses pulse contour analysis and calculates the parameters using patients data. This measurement can be performed using only an arterial catheter.

We aimed to verify the relevance and reliability of LiDCOrapid as a noninvasive method of monitoring hemodynamic parameters in patients during the postoperative period.

The study covered 50 consecutive patients ( 36 men/ median age 66 years) admitted to postoperative ward after various cardiac surgery procedures. The hemodynamic parameters were measured simultaneously using both postoperatively inserted PAC and LiDCO. The agreement between methods was assessed based on indexed hemodynamic parameters (CI, SVRI) using the Bland-Altman analysis.

No statistically significant difference was found between PAC and LiDCO measurements ( $p > 0.05$ ). There's no fixed trend in deviations between the results. In CI only 52% of samples fitted between the limits of agreement (LoAs). Among that group, 65% of samples were located between bias and upper LoA (results understated by LiDCO by  $< 1,0l/min/m^2$  ), and 35% were the results overstated by LiDCO by  $< 0,5l/min/m^2$ . In SVRI 56% of samples were found within LoAs, with 54% in range of understated values.

1. The agreement between the two methods is sufficient enough only when applying to values between bias and upper LoA. 2. The deviation in measurements is substantial both at values noticeably below or above norm and not significant for values within normal range, since it doesn't alter the therapeutic treatment.

**Keywords:** Hemodynamic monitoring, Pulmonary artery catheter, LiDCOrapid

## **Is 'primum' - really - 'non nocere'? Attitudes of Silesian anesthesiologists towards futile therapy**

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ICU doctors are often facing a question if their patient still can be cured or the therapy became futile.

To investigate attitudes and experience of Silesian anesthesiologists towards futile therapy protocol.

E-mail invitation was sent twice to 377 doctors in 02.2017. The study group comprised 39 subjects (20M/19F), including 33 consultants and 6 residents. A 36-item questionnaire was based on the PTAiIT guidelines regarding the ineffective maintenance of organ functions.

The protocol was known by 35/39 responders, among which 23/35 implemented it in the past. 22 people participated in the decision-making process as part of a team. Decision about deploying the protocol was made taking into account other specialists' (17/23) or nurses' (14/23) opinions. Respondents believed that deploying the protocol should be guided by ethical (25/39), social (14/39) and religious (2/39) beliefs. 32/36 decided that there is no time standards when therapy begins futile. 35/36 persons declared that the protocol was useful, although 20/36 suggested that current document was insufficient in regulating legal aspects of futile therapy and should be included on a higher level of legislation. Doctors prolonged therapy, being aware it was futile, due to fear of legal consequences (20/35) or family will (12/35). 29% respondents claimed that once implemented protocol cannot be withdrawn.

The protocol is as an important document, but requires important modifications to be commonly accepted and deployed by Silesian anesthesiologists. Those changes include increase in the procedures' transparency and recognition of the guidelines as the act.

**Keywords: futile therapy, intensive care**

## **Catheter-associated urinary tract infections monitoring in one ICU: 1 year observation study**

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Urinary tract infections (UTI) at the patients with urinary catheter could be serious complication of hospitalization in severely ill medical and surgical patients. Especially they are very common at Intensive Care Unit (ICU).

The purpose of this research was analysis of compliance with "UTI bundle" to prevent UTI and etiology of UTI which occurred in Intensive Care Unit of the University Hospital of Wrocław.

A prospective study (01.01.2016-31.12.2016) was conducted in the 13-bed ICU of the University Hospital in Wrocław. The frequency and etiology of UTI were gathered by using clinical records as well as prophylactic methods compliance were estimated in ICU patients according to special cards which contain 12 elements of UTI bundle.

Among 426 patients urinary tract infections were diagnosed at 34. The incidence index was 7,98/100 admissions to the ICU. UTI were 34% of the overall count of device-associated healthcare-associated infections (n=100). Urinary catheter was used at 96,66 ± 4,29 % patients during 4251 patient-days and 4109 urinary catheter-days. The density of UTI/1000 catheter-days was 7,92. The main pathogens of UTI were *Acinetobacter baumannii* (32%), *Enterococcus faecium* (14,7%), *Klebsiella pneumoniae* and *Escherichia coli* (8%). The lowest compliance with bundle had urinary catheter above the leg avoiding urinary reflux.

In the observed period of time the incidence of UTI was higher than in the NHSN/CDC (2012) report. Analysis of compliance with "UTI bundle" to prevent UTI shows that is not possible to decrease rate of UTI without implementing all methods from INICC protocol.

**Keywords: Urinary tract infections**

INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF NEUROLOGY AND NEUROSURGERY**

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## **Monitoring clinical changes in patients with myasthenia gravis by using MG-Composite Scale**

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**INTRODUCTION** Myasthenia gravis (MG) is a chronic disease, which causes disturbance in neuromuscular conductivity. There is a great variety of symptoms and it is extremely difficult to evaluate patient's condition in objective way. Myasthenia Gravis Composite (MG-Composite) is approved outcome measure, which allows the physicians to monitor the progress of MG.

**THE AIM** We decided to use MG-Composite due to its multi-level assessment of patients' health. The aim of the study was to monitor clinical changes in polish patients with MG by using MGC.

**METHODS AND MATERIALS** Study group consisted of 50 patients treated in Public University Hospital No 1 in Zabrze, from 1.01.2016-31.12.2016. Mean age was 61 years old. MG-Composite was validated into Polish and used to inspect changes in MG patients. The number of points correlates linearly with the severity of myasthenia gravis.

**RESULTS** Our observations have shown considerable variability clinical status of patients with myasthenia gravis during the course of the disease. The second total values of MG-Composite were higher than values of first evaluation of MG-Composite (p

**Keywords:** Myasthenia gravis, MG-Composite, muscles weakness

## **In search of optimal management for lateral fissure arachnoid cysts in pediatric patients: a retrospective study of 60 cases**

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**INTRODUCTION** Intracranial arachnoid cyst (IAC) is a benign cystic lesion filled with cerebrospinal fluid. Some controversies around not only the indications for surgery, but also the optimal method of IACs treatment (endoscopic or microsurgical cystocysternostomy) still exist.

**THE AIM** The objective of the study was to evaluate the efficacy and safety of neuroendoscopic and microsurgical treatment of lateral fissure arachnoid cysts and to present the approach preferred at our department.

**METHODS AND MATERIALS** A retrospective review of 60 children and adolescents treated surgically for lateral fissure arachnoid cyst between 2006 and 2015 at our institution was performed. The treatment outcome was estimated by authors using clinical and radiological criteria. 83% patients were male. The mean age at the time of surgery was 7.4 years (ranged from 6 weeks to 18 years). The mean follow-up was 4.5 years (ranged 13 months-10 years).

**RESULTS** 82.5% of patients were treated by microsurgical and 6.5% by endoscopic cystocysternostomy. In 11% cysto- or subduroperitoneal shunt was implanted. Three cases needed reoperation by cystocysternostomy. Release of the symptoms or significant clinical improvement was obtained in 75% previously symptomatic patients. The cyst reduction was observed in 68% of cases. The intraoperative insignificant bleeding from the cysternostomy region occurred in 2 cases treated endoscopically and 1 case treated with microsurgical approach. In 1 case treated endoscopically significant bleeding from the cyst wall occurred and caused conversion to craniotomy.

**CONCLUSIONS** Microsurgical cystocysternostomy made by microcraniotomy is an effective and safe method of treatment for lateral fissure cysts.

**Keywords:** lateral fissure arachnoid cyst, neuroendocopy, microsurgery, cystocysternostomy, neurosurgery

## **The effectiveness of neuroendoscopic procedures in the treatment of ventricular cysts in children**

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**INTRODUCTION** The neuroendoscopy(NE) provides a treatment alternative for a variety of intraventricular lesions. The main advantage of NE is that it enables, if indicated in the setting of associated hydrocephalus, placement of a ventricular catheter, ETV or septostomy to perform simultaneously. The present popularity of NE arises from its ability to allow effective therapy in the depths of the brain with minimal disturbance of neural tissue. T

**THE AIM** The objective of this study was to retrospectively evaluate the results of the endoscopic treatment of intraventricular cysts performed at our institution.

**METHODS AND MATERIALS** We analyzed records of 48 infants and children who underwent endoscopic surgery for intraventricular cyst at the Department of Pediatric Neurosurgery in Katowice between 2001-2016. The mean time of follow-up was 5.35 years. 61% of patients were male. The mean age at the time of surgery was 4.8 years.

**RESULTS** The cysts were located in the third ventricle(34%), lateral ventricle(27%), region of the quadrigeminal plate(14%), both lateral and third ventricle(11%), septum pellucidum(11%) and the 4th ventricle(2%). ETV was performed in 75% of patients. The most important treatment complication was intraventricular bleeding during surgery. In all of cases the bleeding stopped spontaneously after irrigation without any significant consequences. In 11% of cases shunt implantation was performed afer endoscopic procedure.

**CONCLUSIONS** NE is effective and safe as the first method of treatment in children with intraventricular cysts. In some cases endoscopic cyst fenestration allows to avoid shunt implantation, but in other ones is a complementary technique to shunt.

**Keywords:** neuroendoscopy, ventricular cysts, hydrocephalus

## **Evaluation of the results of selected diagnostic investigations and cognitive impairment in newly diagnosed patients with stroke**

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**INTRODUCTION** Stroke is one of the most common causes of mortality and disability in the elderly, also promotes evolution of cognitive impairment. The main risk factors for stroke are: hypertension, lack of physical activity, ischaemic heart disease, dyslipidemia, atrial fibrillation, leukoaraiosis and atherosclerosis of brain-supplying arteries.

**THE AIM** To evaluate the dependance between the results of selected laboratory parameters of blood, cerebral arterial doppler ultrasonography, leucariosis and cognitive impairment in patients with newly diagnosed cerebral stroke.

**MATERIAL AND METHODS** The study included 29 patients (W:18, M:11) in the age  $68 \pm 12,6$  hospitalized in Stroke Ward in Department of Neurology in Zabrze. Patients were interviewed and neurological examination with NIHSS (National Institutes of Health Stroke Scale) rating and MMSE (Mini-Mental State Examination) were performed. Findings on diagnostic investigations were obtained from case notes. For statistical analysis was used Statistica 12.0.

**RESULTS** The presence of dyslipidemia correlated with a greater neurological deficit (NIHSS more than 4,  $p=0,012$ ). Patients with leukoaraiosis had significantly lower HDL level ( $p=0,039$ ) and higher values of KIM in the carotid arteries ( $p=0,008$ ). Haemodynamically significant changes in extracranial brain-supplying arteries evaluated in ultrasonography correlated with elevated serum triglicerides level ( $p=0,013$ ). There was not significant dependency between MMSE score and other rated parameters.

**CONCLUSIONS** Dyslipidemia correlate with higher neurological deficit among patients with stroke and is related with intensity of others vascular risk factors.

**Keywords:** Stroke, leukoaraiosis, MMSE, dyslipidemia, Doppler ultrasonography

## **Prevalence of hypertension, hyperlipidaemia, diabetes and alcohol dependence syndrome among epileptic patients. Analysis of major clinical findings**

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**INTRODUCTION** Epilepsy is a complex of chronic neurological disorders, which may be caused by changes in the structure and function of the brain. It's characterized by the occurrence of spontaneous seizures, which are caused by the excessive and sudden electrical discharges in neurons.

**MATERIALS AND METHODS** The study included 93 patients hospitalized in the years 2015/16 in the Department of Neurology SUM in Katowice due to epilepsy. Retrospective data from hospital records was analysed. The frequency of comorbidities regarding the male-female ratio and the analysis of morphology of epileptic seizures, selected laboratory parameters as well as imaging studies were presented in the study.

**RESULTS** Average age of patients was 56,3 years. Average illness duration was 45,1 months. Women formed 65,6% of examined group. The most common additional disorders were hypertension (39,8%), dyslipidemia (25,8%), past brain infarction (25,8%) and diabetes(17,2%). Alcohol dependence syndrome appeared more often among men( $p=0,002$ ). Women were more likely to have diabetes ( $p = 0.036$ ). There was also a correlation between age and CRP. Among imaging studies, TK headaches were the most common, which in 86,6% of the examined patients was abnormal. C

**CONCLUSIONS** Epilepsy patients are most often burdened by hypertension, ischemic stroke, and diabetes. Women are more likely to have diabetes and men are more likely to develop alcohol problems. Inflammatory parameters increase with age of patients. Epileptic patients require intensive primary and secondary prophylaxis.

**Keywords:** Epilepsy,diabetes, alcohol dependence

## Clinical characteristics and postoperative outcomes of temporal bone meningioma

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**INTRODUCTION** Meningioma's are the most common primary intracranial tumors. They arise from the arachnoid cells and are usually slow-growing. The resulting symptoms depend on the location and size of the tumor. Meningioma's of temporal bone present a particularly significant challenge to surgically treat due to the ample blood supply, points of neural attachment, and compression of eloquence structures.

**THE AIM** The aim of the study is to estimate the incidence of temporal bone meningioma's and to evaluate the effectiveness of therapeutic intervention.

**MATERIALS AND METHODS** In this study we have retrospectively reviewed a group of 45 patients with temporal bone meningioma's who underwent surgery treatment using retrosigmoid craniotomy approach from 2007 to 2015 at the Kornel Gibinski University Clinical Center in Katowice. Meningioma's were stapled into two groups on the basis of location: 20 temporal bone meningioma's and 25 cerebellopontine angle meningioma's. Cases were further analyzed on tumor characteristics, the outcome of the treatment (Simpson scale) and assessment of the patient recovery (Glasgow Outcome Scale).

**RESULTS** Total resection of cerebellopontine angle meningioma's was achieved in 22/25 patients and in 18/20 of temporal bone meningioma's. Mean GOS was 4,42. On average, hospitalization after procedure lasted 11 days including 1 day at Intensive Care Unit. The most common clinical manifestation included decreased hearing, tinnitus, vertigo and headache.

**CONCLUSIONS** In our study we estimated temporal bone meningioma were about 10% of all intracranial meningioma's. At mean follow-up 94% patients are currently alive, 4% died and 2% showed recurrence and was reoperated.

**Keywords:** meningioma, cerebellopontine angle, temporal bone, outcomes, resection

## **Evaluation of the head circumference growth rate in the hydrocephalic children after implantation of the ventriculoperitoneal shunt**

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Work's tutor: Professor Marek Mandra

**INTRODUCTION** 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** The aim of our research was to evaluate the rate of head circumference rise in hydrocephalic children after implantation of ventriculoperitoneal shunt.

**MATERIAL AND METHODS** The questionnaire created by us was used in our research study and measurements of head circumference of children after shunt implantation were made. **RESULTS:** 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.

**CONCLUSION** 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 the surgical treatment in children with Chiari type I malformation

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**INTRODUCTION** Chiari type I malformation (CM I) is a condition characterized by downward displacement of the cerebellar tonsils through the foramen magnum. There are two main types of surgery performed for the treatment: posterior fossa decompression and posterior fossa decompression with opening of the dura mater.

**THE AIM** The aim of our research work was to evaluate the life quality of the patients operated due to CM I in the Department of Pediatric Neurosurgery of the Medical University of Silesia in Katowice.

**METHODS AND MATERIALS** We performed a retrospective analysis of 11 patients (6 girls and 5 boys; mean age 9.7 years old) diagnosed with CM I who were admitted to our hospital between 2007 and 2016. Short-term evaluation of the patients' state was based on presenting symptoms and medical imaging results before and after surgical treatment. Long-term follow-ups were done using surveys based on the Chicago Chiari Outcome Scale.

**RESULTS** Headache in the occipital region was the most common presenting symptom in our group of patients (7/11). 8 out of 11 of our patients had posterior fossa decompression without duraplasty performed. In the survey took part one parent of each patient. The most common postsurgical symptom in children reported by their parents was headache (8/11). Overall functionality assessment of children was possible due to their age in 8 cases. 6 out of 8 patients' parents declared the improvement in their children's life quality after the surgery.

**CONCLUSIONS** Based on our research study, we can conclude that surgery is an effective and needed treatment method in the symptomatic patients suffering from CM I. The improvement of symptoms particularly concerns headache.

**Keywords:** Chiari malformation, posterior fossa decompression

## **Connection between vascular risk factors and national institutes of health stroke scale at admission in patients with ischemic stroke.**

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**INTRODUCTION** Ischemic stroke is a leading cause of long-term disability worldwide. Treatment of diabetes (DM), hypertension (HT), coagulation and lipid disturbances is also effective in the reduction of stroke incidence.

**THE AIM** To investigate whether well-known vascular risk factors are related to the worse clinical outcomes evaluated at admission by National Institutes of Health Stroke Scale (NIHSS) in the patients with acute ischemic stroke (AIS) prior to the tissue plasminogen activator treatment (tPa).

**MATERIALS AND METHODS** Based on the patient's medical history from the Department of Neurology in Zabrze, 36 patients with diagnosed AIS were enrolled in the retrospective study. Depending on the NIHSS results at admission, the study group was divided into two subgroups: I- determined as minor to moderate stroke severity (n=26 individuals, NIHSS≤15) and II- presented moderate to severe stroke (n=10, NIHSS>15).

**RESULTS** The mean age of the patients was 67.75±12.07, the majority of them were males (69.44%). The average NIHSS was 12.78±5.32. The subgroups I and II were homogenous according to age (68.1±12.5 vs.66.8±11.4 p=0.45, respectively) and proportion of men (26.9% vs.40.0% p=0.45, respectively). 23,1% of the patients in I were treated with ASA prior the stroke, while none of the patients in II used ASA agents prior to the AIS. Between I and II there were significant differences in the HT diagnosed prior to the AIS (57.8% vs 100% p=0.012, respectively).

**CONCLUSIONS** In AIS, severe neurological condition evaluated in patients as NIHSS>15 at admission was related to the HT and entire lack of ASA therapy prior to the stroke.

## **Comparison economic aspects of treatment for multiple sclerosis in Poland, countries of Europe and USA as the element of patient`s health care.**

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**INTRODUCTION** Cost's assessment of multiple sclerosis (MS) therapy is a part of the comprehensive health care.

**THE AIM** In our study we analyzed the up-to-date related to the costs of the treatment of patients with multiple sclerosis in Poland compared to different countries.

**MATERIALS AND METHODES** We reviewed economic information available in Clinic of Neurology in Zabrze in 2016. Analysis concerned interferon beta-1a, interferon beta-1b, fingolimod, natalizumab, glatiramer acetate, dimethyl fumarate. Next, we analyzed database from last 10 years in Europe and both Americas.

**RESULTS** The analysis showed, that the best cost-effectiveness ratio associated with treatment outcomes were observed in therapy of interferons, fingolimode and glatiramer acetate. All mean costs of MS patients treatment in Poland were similar compared with to the costs of medical care MS patients in Europe, and lower compared with to the costs of therapy MS in USA, in 12 months period. Newly diagnosed of MS patients were 3.5 times more often hospitalized, 2 times more often were visited the ER and 2.4 times more often carried out physical therapy, compared with patients without MS. Total MS treatment cost depends on: EDSS scale, gender, age, frequency of disease relapses and time of hospitalization.

**CONCLUSIONS** Analysis of the economic aspects the therapy of multiple sclerosis have shown a gradual increase in the cost of treatment over the years. Differences in costs is also noticed between countries. The economic deficit is associated not only with medical therapy, but also with frequent hospitalizations, early loss of ability to work and lowering the quality of life of patients or their caregivers.

## **Relapse of Multiple Sclerosis (MS) with no hospitalization - is it possible and desired or inconvenient and avoided?**

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**INTRODUCTION** Relapsing-remitting MS is an inflammatory demyelinating disease of the CNS. Relapse treatment algorithm is based on IV steroids administration in hospital. Nevertheless there is an alternative, treatment at home with oral steroids(OS)

**THE AIM** To assess patients' and specialists preferences referring to the form of relapse treatment, factors affecting their attitude, their knowledge concerning efficacy and safety of these medical approaches and necessity of creating unified criteria for relapse management

**METHODS AND MATERIALS** We created two questionnaires for two groups. Study was conducted among patients attending follow up visit at outpatient clinics of Medical University of Silesia. Scrutinized cohort consisted of 50 patients who filled out 21-question surveys. We got acquainted with opinion of neurologists, by posing 12 inquiries. Beside it we performed a research on the online support group

**RESULTS** Patients questionnaire revealed that 72% of them prefer OS,43% pointed out the comfort of staying home as a main reason. More than a half of respondents considered both therapies equally safe and effective although OS was believed to be slower acting. While polling specialists opinion: 81% prescribe OS, however 60% of them choose it exceptionally. 81% of doctors expressed the need for creating new criteria of relapse treatment algorithm. 88% of online MS support group members was interested in OS during next relapses

**CUNCLUSIONS** Current algorithm of IV steroid administration during MS relapse causes that neither patients' nor neurologists' expectations are fulfilled. According to these two groups there is no contradiction to more frequent application of OS at home

**Keywords:** Relapsing-Remitting Multiple Sclerosis, Oral steroids therapy, treatment algorithm

## The effectiveness of ACTH in infantile spasms

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**INTRODUCTION** Infantile spasms typically occur in infants before the second year of life, usually near the 5th month. West Delphi consensus classified infantile spasms with hypsarrhythmia as West syndrome. Patients with infantile spasms can be divided into groups: structural/metabolic genetic and unknown cause. ACTH is the most accepted treatment for infantile spasms. However, the exact mechanism of action, optimal form (natural or shorterer synthetic -tetracosactide), dose and duration are still unknown.

**THE AIM** Purpose of the study was to evaluate the effectiveness of treating infantile spasms, with 0.02 mg/kg/d of tetracosactide for 8 weeks.

**MATERIALS AND METHODS** We analyzed history of 37 patients (25 males) with infantile spasms (with or without hypsarrhythmia) on ACTH therapy, hospitalized in Department of Pediatric Neurology of the SUM in Katowice in the years 2009 – 2017. 26 patients have structural/metabolic and 1 genetic cause of infantile spasms. In 10 patients cause remains unknown. Mean age was 9,1 month (SD=7). MRI, EEG (including video EEG), assessment of development as well as ophthalmological, endocrinological and other consultations were performed. Metabolic and genetic studies were done when they were needed. ACTH was used in dose of 0,02 mg/kg/d for 8 weeks. Time of treatment was shorter in few cases. Adverse reactions for ACTH were noticed.

**RESULTS** Our investigation proves that a dose of ACTH administered for 8 weeks is effective in eliminating epileptic spasms in 77% patients with structural/metabolic and 90% with unknown cause of infantile spasms.

**CONCLUSIONS** Our results demonstrate, that ACTH treatment is an useful weapon in coping with infantile spasms.

**Keywords:** Infantile spasms, ACTH

**Fatigue in multiple sclerosis: the impact of physical activity and disability.**

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**INTRODUCTION** Fatigue is one of the most common and disabling symptoms of multiple sclerosis (MS). It can be defined as a subjective lack of physical and/or mental energy. It strongly affects the functioning of patients.

**THE AIM** To evaluate the frequency of fatigue in MS patients and the impacts of physical activity and disability.

**METHODS AND MATERIALS** The study was conducted at the outpatient clinic of the Department of Neurology in Katowice. The examined group consisted of 55 MS patients with clinical relapsing-remitting form. Mean age was  $39.75 \pm 9.14$  years. The following questionnaires were used: Fatigue Severity Scale (FSS), Visual Analog Fatigue Scale (VAFS), Modified Fatigue Impact Scale (MFIS), International Physical Activity Questionnaire (IPAQ), Beck Depression Inventory (BDI) and authors' questionnaire.

**RESULTS** The mean EDSS score in the group was  $3.33 \pm 2.04$  (range 1-7). Fatigue measured by FSS scale was observed in 24 (44.4%) MS patients. The average FSS score was  $32.8 \pm 15.3$ . The average MFIS total score:  $29.9 \pm 17.38$ . Patients' physical activity were assessed by MET as following: deficient in 36.4%, moderate: 36.4%, vigorous: 27.3%. We observed a significant positive association between fatigue (FSS; MFIS) and EDSS ( $p=0.015$ ;  $p=0.007$ ) and negative correlation between MET and fatigue ( $p=0.004$ ;  $p=0.03$ ). In professionally inactive patients we noted significantly higher level of fatigue in comparison with active individuals ( $p=0.03$ ).

**CONCLUSIONS** The results confirmed that fatigue is a common symptom in patient with MS. The disability status, lack of physical or professional activity have an impact on higher prevalence of fatigue among MS patients.

**Keywords:** Multiple Sclerosis, Fatigue, Physical activity, Disability

## **Association between selected clinical features and duration of the disease in patients with dementia from the upper Silesia region.**

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**INTRODUCTION** Dementia is a widespread syndrome affecting behavioral and cognitive functioning. The Upper Silesia region is a territory of Poland with the highest level of industrial development and with the largest population per square km. However, the prevalence of late or undetected dementia is high globally.

**THE AIM** To determine the time from the first symptoms to the dementia diagnosis and to investigate whether the number of symptoms was related to disease duration.

**MATERIALS AND METHODS** 66 patients from the Department of Neurology in Zabrze with diagnosed dementia were enrolled in the retrospective study. Depending on the number of selected dementia symptoms, the study group was divided into two subgroups: I (n=43 individuals) and II (n=23) (with  $n \leq 3$  and  $n \geq 4$  symptoms, respectively). Additionally, time of the disease duration was analyzed according to the number of the dementia symptoms.

**RESULTS** Median duration time of the disease (from the first symptoms to the inclusion day FS-ID) was 60.9 months [36.5], while from the diagnosis to the inclusion day (D-ID) and from the first symptoms to the diagnosis (FS-D) were 36.3 [35.6] and 20.3 [25.9] months, respectively. Between I and II groups there were observed significant differences in FS-ID (48.7 [36.5] vs. 73.0 [49.6] months, respectively) and D-ID (30.2 [28.7] vs. 45.7 [42.4], respectively) but there were no changes in FS-D (16.3 [27.4] vs. 22.5 [25.2]).

**CONCLUSIONS** Considerable latency in the diagnosis of dementia was presented. Clinical features of the patients were associated with the disease duration. Great efforts are required to improve earlier dementia diagnosis and to reduce complex clinical course of the disease.

**Keywords:** Dementia, disease duration, symptoms.

## **The results of surgical treatment meningiomas the front part of the skull, detailing the patients with the Foster-Kennedy syndrome**

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**INTRODUCTION** Meningiomas arise from arachnoid cells. Most of them are benign because the tumors are slow-growing and have low potential to spread. 12-20% of all intercranial meningiomas are located in anterior cranial fossa ant it can be cause of Foster-Kennedy syndrome, which is uncommon. The treatment of the intercranial meningiomas is neurosurgical resection with craniotomy.

**THE AIM** We carried out this research to evaluate the result of surgical treatment meningiomas and the frequency of the Foster Kennedy syndrome.

**METHODS AND MATERIALS** There were 117 patients diagnosed with meningioma. All patients were qualified for a surgical treatment. Among them we distinguished a subgroup (81 patients, 69.23%) of people had meningioma in the front area of the brain, however the rest of the patients had the meningioma in other location. Medical records (including histopathological reports) were reviewed for all of the patients. Statistica programme was used to differentiate meningiomas regarding the gender of the patients , disease progress an WHO grading.

**RESULTS** Nearly 90% patients had a total resection, in remaining cases subtotal resection. About one-third (1/3) patients occurred complications, of which most of them(36) was early complications. Death was in 3 cases.

**CONCLUSIONS** Meningiomas situated in the front part of the skull are challenging lesions to treat, given to proximity of e.g. olfactory, tracts and frontal lobes. Nevertheless in considerable number of cases it is possible to perform a total resection. As it is shown in our researches, surgical treatment is rather safe and efficient method of coping with them. However, there is still significant number of patients occurring complications.

**Keywords:** Meningiomas, Foster Kennedy syndrome, the front part of skull



## **Mobile application as a new instrument in secondary stroke prevention.**

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**INTRODUCTION** The frequency of the stroke is estimated to be 60 000 new cases per year in Poland and a death rate stands at 40%, occupying third place in mortality. There is also a high disability index that results in deterioration of daily and social activities.

**THE AIM** 'Time is brain'—this phrase emphasizes that benefits of thrombolytic therapy are time-dependent. We developed a smartphone application to help patients prevent next incidents of stroke and recognize first symptoms.

**MATERIALS AND METHODES** Our application was created with help of IT specialists for users of Android smartphones. It is dedicated for patients after stroke or with high risk of stroke and also for their caregivers. It contains information about stroke, risk factors or contact details to medical institutions. This app allows users to save measurement results to show them in a clear form to their GP on a follow up visit. It is possible to be informed about forthcoming check-up by text message. We have also created FAQ section with answers to most frequently bothered questions.

**RESULTS** Our application may be helpful in reducing the risk of the next stroke. It can also be useful in identifying and eliminating risk factors before stroke and in reducing the time of reporting to the hospital for thrombolytic candidates. It may also profit in better rehabilitation results and facilitate monitoring of clinical condition.

**CONCLUSIONS** Smartphone apps can be used to integrate medical information, laboratory results and clinical assessment tools to bring higher level of healthcare and supervision over neurological patients.

**Keywords:** Stroke prevention, cerebrovascular accident, application, smartphone, telemedicine

## Changes in quality of life in patients with myasthenia gravis.

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**INTRODUCTION** Myasthenia gravis is acquired, chronic and disabling disease which is manifested by sleepiness, rapid fatigue and weakness of skeletal muscles. Emerging evidence suggests that these symptoms in myasthenia gravis is a relevant problem that negatively impacts a well-being.

**THE AIM** We analyzed changes in quality of life and patient satisfaction with treatment in 50 cases of chronic disabling myasthenia gravis treated in the outpatient clinic.

**MATERIAL AND METHODS** This was the prospective study for the period of one year in 2016 in Zabrze. All patients underwent neurological examination and filled in the questionnaire about quality of live – MG – QOL 15 what is a short questionnaire to be filled up by the patient. The evaluation includes mood, restrictions of physical and social activity and severity of some disease symptoms. Patients were reassessed second time after 6 months. The scale was validated to polish.

**RESULTS** In the second trial total values of MG-QOL 15 were higher than values of first evaluation of MG-QOL 15 ( $p < 0.05$ ) in patients with myasthenia gravis. Similar results were obtained in the evaluation of the quality of life using the SF-36 questionnaire. The second evaluation of SF-36 conducted after 6 months from the first visit, showed higher values ( $p < 0.05$ ) in our patients. It was also observed an increase a doses of acetylcholinesterase inhibitors in patients with myasthenia gravis, compared to baseline ( $p < 0.05$ ).

**CONCLUSSION** MG-QOL 15 form is useful and reliable tool to assess current quality of life of patients with myasthenia gravis. Changes of quality of life may be associated with variable course of myasthenia gravis.

**Keywords:** Myasthenia Gravis, Quality of Life, MG-QOL 15

## **The myasthenia gravis activities of daily living scoring system (MG-ADL) as a useful outcome measure and in routine clinical management.**

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**INTRODUCTION:** MG-ADL (Myasthenia gravis - activities of daily living) questionnaire is a short and easy to use disease-specific eight-question survey of myasthenia gravis (MG) symptoms that can be completed in 2-3 minutes with no need for specialized equipment or training.

**THE AIM:** The aim of this study was to evaluate changes in neurological condition of patients with myasthenia gravis using the form MG-ADL for selected clinical factors.

**METHODS AND MATERIALS:** This prospective study for the period of 01.2016 - 12.2016 was conducted on 50 patients with MG who underwent neurological evaluation and completed the Polish translated version of the MG-ADL questionnaires. All patients were treated at the Medical University of Silesia Clinical Hospital No. 1 in Zabrze.

**RESULTS:** The analysis showed a significantly higher score on the second assessment of MG-ADL questionnaire in patients with myasthenia gravis compared to the first visit (p

**Keywords:** Myasthenia gravis, MG-ADL, MGFA, muscles weakness

## **Frequency of cardiovascular diseases in the group of patients with epilepsy.**

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**INTRODUCTION** In Poland 400 thousand people suffer from epilepsy which is one of the most popular neurological diseases. Epilepsy is a lifetime disease and that is why it is connected with many cardiovascular diseases (CVD) which are the most common cause of death in Poland.

**THE AIM** The aim of work is to present the frequency of cardiovascular diseases in the group of patients with epilepsy (including sex and age), what may lead to implementation of prevention and decrease risk factors of CVD.

**METHODS AND MATERIALS** Research was performed on the group of 105 patients who suffer from epilepsy. To achieve the goal it was made a database of statistical comparison of CVD.

**RESULTS** Analysis of statistics show that the most common CVD coexisting with epilepsy is hypertension (41%). Next locations take: dyslipidemia (25,7%), ischemic stroke (24,8%), ischemic heart disease (13,3%), atrial fibrillation (10,5%). On the last place is located hemorrhagic stroke (2,9%). Such diseases occur more frequently among women except of atrial fibrillation which emerges in the same percent in both sexes.

**CONCLUSIONS** Hypertension is the biggest problem for patients with epilepsy that is way it is important to prevent such disease. Women with epilepsy are more endangered on CVD which correlates with longer lifetime and higher incidence of CVD in gerontic age.

**Keywords:** Cardiovascular diseases (CVD) , frequency , epilepsy

## **Early rehabilitation and what next? Problem with community care in post-stroke patients.**

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**INTRODUCTION** Stroke is the main reason of disability among elderly people. Motor and speech rehabilitation is equally important as pharmacological treatment. Most of stroke patients require a long-term rehabilitation. The guarantee of professional health care and appropriate access to rehabilitation is a challenge for modern medicine.

**THE AIM** The aim of the study was to investigate a process of stroke patients' rehabilitation after hospitalization. Motor and speech therapy were analysed separately.

**METHODS AND MATERIALS** The study was conducted using telephone survey among stroke patients admitted to Department of Neurological Rehabilitation of the Medical University of Silesia between 2013 and 2015 year. 214 calls were performed, 111 responders agreed to participate in the study. 70 people answered the questions from the questionnaire, 41 of the 111 patients died. The assessment of their physical condition was based on modified Rankin Scale (mRS) and Barthel Index of Activities of Daily Living (Barthel ADL Index).

**RESULTS** The study concluded that 94,3% of stroke patients stay at home under the supervision of family. 32,8% of responders after early rehabilitation don't go on with further rehabilitation. Among them 33,3% reported improving health, while in patients who regularly undergo rehabilitation improvement occurred in 60,5% of cases. The most common type of rehabilitation, regardless of the degree of disability, was ambulatory rehabilitation (46,5%). Most patients with speech disorders (81,1%) didn't use speech therapy.

**CONCLUSIONS** Despite the recommendations there is a significant percentage of stroke patients who don't continue rehabilitation. Speech therapy is occasional. Probably it's because of limited access to speech therapists and the lack of awareness of this kind of rehabilitation.

**Keywords:** stroke, rehabilitation, speech therapy

## Characteristics of anti-epileptic drugs side effects.

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**INTRODUCTION** Antiepileptic drugs (AEDs) are commonly associated with adverse effects such as cutaneous manifestations. Early recognition constitute an important aspect of treatment with epileptic drugs that may prevent potentially fatal outcome and might influence on therapeutic decisions.

**THE AIM** To assess the incidence of skin reactions to AEDs in Polish patients with epilepsy.

**METHODS AND MATERIALS** We assessed retrospectively and prospectively 753 consecutive patients with epilepsy. A detailed survey of medical records concerning all treatment with AEDs was performed.

**RESULTS** A total of 753 patients who were exposed to 18 different AEDs were included. Mean age of patients was 35.8 ( $\pm 14.2$ ), mean age at onset of epilepsy was 20 ( $\pm 15.4$ ) and 417 (55.4%) were females. AED-related skin reactions occurred in 54 patients (7.2%). Mean age at onset of skin reactions was 28.9 ( $\pm 17.8$ ). There were no differences between patients with skin manifestations to AEDs in terms of age, sex, type of epilepsy, and age at onset of epilepsy. 92.5% of the reactions occurred to patients on lamotrigine (LTG) (27 patients), carbamazepine (CBZ) (20 patients), or oxcarbazepine (OXC) (3 patients). 4 patients developed skin reaction to lacosamide (LCZ), phenytoin (PHT), levetiracetam (LEV), and valproate (VPA) (one patient to each drug). In 26 patients, skin reaction occurred to first-line treatment of new onset epilepsy (16 to CBZ, 10 to LTG); for the remaining 28 patients, to the add-on treatment. In 16 patients, the culprit drug was added to VPA. Interval between institution of treatment and onset of rash last 10 (5-14) days. 4 (2-10) days were between onset of rash and AED discontinuation. In next 7 (5-12) days rash subsided. 6 patients with AED-related skin reactions reported history of rash with other AED. The most common type of skin reaction was maculo-papular exanthema, one patient developed Drug Reaction with Eosinophilia and Systemic Symptoms and three patients were diagnosed with Stevens-Johns

**Keywords:** anti-epileptic drugs, side effects, epilepsy

## **Application of Intensive Neurophysiological System of Neurophysiological Rehabilitation in children with brain injury - prof. V. I. Kozyavkina**

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**SUMMARY** Admission. Method of prof. Kozyavkin (System of Intensive Neurophysiological Rehabilitation - SIRN) is a method based on a highly effective technology of treatment for patients with cerebral palsy, the effects of organic paralysis of the nervous system and vertebrology pathology. The basis for Intensive Rehabilitation System is the original method of multisegmental biomechanical correction of the spine developed by prof. V. Kozyavkin.

**OBJECTIVE** Presentation of prof. V.I. Kozyavkin method as one of the leading therapies for the treatment of developmental disorders caused by damage to the central nervous system, polymorphism, CP (cerebral palsy) The method of quantitative spasticity measurement with Neuroreflexor. Dynamics of spastic muscle tension group of 10830 patients: decrease of 93%, increase of 0%, no change of 7% Development of new motor function group of 12,256 patients: head control 75%, seat 62%, rolling 28%, standing 41%, free walking 19%. Condition of patients between course courses 7727 patients 45% improvement, 47% state stability, 8% recurrence.

**RESULT** Diverse healing influences of the SIRN methodology (System of Intensive Neurophysiological Rehabilitation) that complement and reinforce each other, are aimed at achieving the main goal of rehabilitation - improving patients' life quality. By stimulating compensating possibilities of a child's body and activating brain plasticity, the system creates a new functional state, which opens up possibilities for rapid motional and mental development of the child.

**Keywords:** SRNA (System of Intensive Neurophysiological Rehabilitation vertebrology, biomechanical correction of the spine, CNS (central nervous system), CP (cerebral palsy), polymorphism

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KATOWICE - POLAND



## **SESSION OF PSYCHIATRY**



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**Depression - underestimated problem of patients with pulmonary diseases.**

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**Introduction** Chronic diseases raise the risk of mood disorders. Patients with chronic pulmonary disease struggle with severely impaired functionality, somatic and psychogenic pain. **The Aim** The aim of our study was to assess the prevalence of depression in population of patients hospitalized in Pulmonary Department in Katowice and determine the impact of depression on different aspects of life. **Methods & Materials** The study was conducted on basis of Beck Depression Inventory (BDI) and author's questionnaire concerning quality of life. 111 patients hospitalized in Pulmonary Department in Katowice were included, 58 women and 53 men. Spirometry, blood gases measurement and anthropometric tests were used. All statistical analyses were conducted using Statistica v12. **Results** Patients with BDI score 10 ( $n=41$ , 37%) did not differ in age, 54,3 (SD=13,0) vs 59,9 (SD=10,2) respectively,  $p=0,08$ . Patients with mood disorders presented higher scores in MRC dyspnea scale ( $2,1+/-1,3$  vs  $0,8+/-1,0$ ,  $p=0,00$ ), however groups were similar in pulmonary function (FVC, FEV1, Tiff%). Patients with severe mood disorders had disturbed perception of their body weight and appearance, moreover they declared lower satisfaction in their sexual life. Depressive symptoms were also related to nicotine addiction. Lower mood was related to intensified presentation of somatic symptoms, such as dyspnea. Activity of patients with severe mood disorders was limited, especially in fields of sport activity and house activity. Women had higher BDI scores than men ( $p=0,037$ ). **Conclusion** Mood disorders are frequent among patients with lung diseases. Untreated depressive disorders may cause decrease in life quality.

**Keywords: depression, quality of life, body image**

## **Depression and anxiety symptoms in surgical patients.**

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Introduction: In surgical patients proper psychological care positively affects such aspects as hospitalization time (thus reducing the treatment cost), the severity of pain experienced by patients and most importantly, the post-surgical convalescence. Aim: The aim of the study was to determine the severity of anxiety (both State-Anxiety and Trait-Anxiety) and depressive symptoms in patients prepared for surgical procedures in correlation with psychosocial factors. Material and methods: Among 300 patients asked to participate in the study 253 people (83,6%) completed all questionnaires – State-Trait Anxiety Inventory (STAI), Beck Depression Inventory (BDI) and sociodemographic questionnaire. The study has been approved by the Bioethical Committee of Medical University of Silesia in Katowice. Results: In the study group there were 253 patients, 118 females and 135 males, average age was 55.4 years. The meanscore on State-Anxiety Inventory was 41.9 points; 44.7 for women and 39.4 for men. The mean score on Trait-Anxiety Inventory for whole group was 36.2 points; 38.6 for women and 34.1 for men. 33.9% of patients had a BDI score indicating moderate depressive symptoms, while 8.4% - severe depressive symptoms. Among sociodemographic factors positively correlated with State-Anxiety were living in concubinage, divorce and having children. Conclusions: The group of patients assessed in the study presented relatively high levels of anxiety and depression. Thus, we conclude that this group of patients require pharmacological care to minimize the discomfort before the surgical procedure. That would result in better convalescence and significantly decrease the hospitalization cost.

**Keywords: Stress, depression, surgery**

## **The prevalence of dysmorphophobia among patients opting for plastic surgery procedures.**

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Introduction: It is estimated that 15% of aesthetic medicine clinics patients may suffer from dysmorphophobia. Increasingly wider access to aesthetic medicine requires a deep reflection on the process of qualification to this type of procedures. Aim: The aim of this study was to assess the prevalence of body dysmorphic disorder (BDD) among patients willing to undergo plastic surgery procedures. Material and methods: The study population consisted of 100 consecutive patients in the qualification process for the cosmetic surgery procedures. Patients were asked to complete the questionnaire about demographic data, current and previous cosmetic procedures and Cosmetic Procedure Screening Questionnaire (COPS). Results: Fully completed questionnaires were obtained from 87 cosmetic surgery applicants, 38 male (43.7%) and 49 female (56.3%). Almost 30% of subjects presented traits of dysmorphophobia (16% male; 13.8% female). Suspicion of body dysmorphic disorder was two times more frequent among patients qualified to cosmetic surgery procedures (40%) compared to patients who decided to underwent minimally invasive cosmetic procedures (19%;  $p=0.03$ ). Most frequently, subject with BDD has become preoccupied with their abdominal fat (42.3%), skin (23%) and breast (15.4%). Obese patients ( $BMI>30$ ) presented BDD more often (58.3%) compared to overweight or healthy weight patients, both 23% respectively ( $p=0.001$ ). Conclusions: Patients' qualification to aesthetic medicine and plastic surgery procedures should be performed in a more thorough manner and screening for BDD should be taken into account, in order to avoid unnecessary procedures among those who suffer from dysmorphophobia.

**Keywords: dysmorphophobia, plastic surgery, aesthetic medicine**

## **Evaluation of factors which form the worldview and beliefs of the 6th year medical students and their impact on the consciousness of the respondent.**

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Consciousness is the basic and fundamental mental state in which the living organism is aware of internal phenomena and changes occurring in the external environment. Worldview as an integral component of human consciousness constitutes a relatively constant set of judgments, beliefs and opinions about the surrounding world reach from various fields. The purpose of the study was to assess the factors influencing the beliefs, beliefs and values of respondents and their role in creating their consciousness. The research instrument was an authorial and anonymous survey. The study involve 146 students of the last year of 6-years of medical studies, 70% of which were women and 30% men. The average age of the respondents was mainly determined by the age range of 24- 26 yr. 71% of respondents declares themselves as a believers. Permanent residence of students: 73% city > 10 ths. residents, 17.4% - village and 9.6% city < 10 ths. Among the elements mentioned most by the worldview and values on respondents' awareness are: 1) environment and external environment, 2) education, 3) authorities in the particular field, 4) attitude of parents and family and 5) religion and religious leaders. Infinitesimal influence of the students' awareness was: a) the media, b) social organizations, and c) actors, musicians, artists, etc. Evaluation of the components affecting the surveyed population has shown that the environmental (family, social) and education-related factors most form the future physicians' consciousness. There is no clear difference between the genders in the answers evaluating the whole of the individual facts and values.

**Keywords: consciousness, worldview, mental state.**

**You're daddy. Are you ready? - Paternal Postnatal Depression.**

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Introduction: Postpartum depression is a mental disorder which makes it difficult to built normal relations in family and thereby it affects negatively child's development. Therefore it should always be identified as soon as it is possible and the parent should receive support and treatment. Unfortunately, as long as diagnostic vigilance is kept when it comes to mothers, then it is often forgotten that this kind of depression can also concern fathers. The aim: The aim of the study was to analyze the frequency of occurrence of postpartum depression among fathers, whose children were no older than 12 months old and to analyze the factors that may affect it. Methods & Materials: The anonymous and voluntary questionnaire involved 306 men. The mean age of the surveyed men was 30 years, minimal – 17, maximal - 50. The questionnaire was spread electronically among fathers and it consisted of EPDS Questionnaire which defined their mood during last 7 days before filling in the form and additional questions concerning: the child's age, previous mental illnesses, the assessment of socio-economic status and also a question whether the mother suffered from postpartum depression. Results & Conclusions: In the performed study 17,84% of the surveyed men reached the result which can indicate that they suffered from postpartum depression. It was observed more often among men, who suffered from depression before (60%) and also among fathers whose relations with the child's mother deteriorated after the labor (40,82%). The high percentage of postpartum depression is also shown among men, who are not satisfied from their socio-economic situation.

**Keywords: postpartum depression, depression, fathers, childbirth**

**Psychopharmacology from a clinicians' perspective – pilot study.**

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**INTRODUCTION** Even though brain science is fairly well developed nowadays, finding cerebral mechanisms which can be pharmacologically manipulated remain to be challenge. Animal models are misleading, preclinical screens are not satisfactory, not to mention costly clinical studies. This may be the explanation why major pharmaceutical companies seem to lose interest in the development of psychopharmacology, brushing aside prevalence and medical need and engage in different fields of medicine

**THE AIM** The aim of the study was to evaluate what is lacking most in pharmacology used in therapy on the daily basis and emphasize wishes of the polish psychiatrists.

**METHODS & MATERIALS** The author's questionnaire was carried out during the International Medforum Psychiatry Congress 2016 in Wisla, Poland.

**RESULTS** 109 psychiatrists, aged mainly 41-50 (31 men and 78 women) , were surveyed. Affective disorders, schizophrenia and anxiety disorder were most frequent diagnoses made by the doctors while antidepressants was the major group of drugs used in daily practice. Areas facing the biggest medical need to introduce new drugs were schizophrenia and dementia. Versions of existing drugs, but with fewer side-effects and completely new drugs were perceived as the most desired forms of treatment. Reasons slowing down the development of psychopharmacology are said to be lack of enough funding and legal difficulties.

**CONCLUSIONS** Has the golden age of psychopharmacology already passed? 51.38% of respondents answered that it reached its peak in the last decade of XX century. On the other hand psychopharmacology still seems to be unsatisfactory and 37.62% of inquired doctors are looking forward to completely new solutions.

**Keywords: psychopharmacology polish psychiatrists opinion**

## **The prevalence of depressive and sleep disorders in patients with rheumatoid arthritis.**

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Introduction: Rheumatoid arthritis (RA) is the most common chronic inflammatory joint disease, affecting 0.5–1% of the population. Sleep disturbances and depression appear to be prevalent psychiatric disorders among RA patients. The main goal of RA treatment is to reduce activity of the disease. The aim: To estimate the prevalence of depressive and sleep disorders among patients with RA. Methods & Materials: The study group involved 47 patients (39 women and 8 men) with rheumatoid arthritis. The mean age was  $59.4 \pm 12.1$  years. The study was conducted at Upper Silesian Medical Centre in Katowice. 24 patients were attended at the Outpatient Clinic got standard treatment, whereas 23 were received biological treatment at the Department of Internal Medicine and Rheumatology. The following questionnaires were used: Beck Depression Inventory (BDI), Pittsburgh Sleep Quality Index (PSQI), Visual Analogue Pain Scale (VAS) and authors' questionnaire. Results: 40.4% patients obtained a BDI score equivalent to depressive disorders. The mean score was  $11.2 \pm 8.2$ . Poor sleep quality measured by PSQI was observed in 48.9% of patients. The mean score was  $7 \pm 4.2$ . There were no significant differences between depressive symptoms and both age ( $p=0.5$ ) and gender ( $p=0.4$ ). Also there was no significant correlation between treatment and sleep disturbances ( $p=0.5$ ). We found a significant correlation between depression and sleep problems ( $p=0.0004$ ). Conclusions: The findings indicate that decreased sleep quality and depressive disorders are frequent in RA patients. Identifying and treating comorbid sleep disturbances and depressive symptoms can improve the treatment of those patients.

**Keywords: Rheumatoid arthritis, depression, sleep disorders**



## **Association between affective disorders and the usage of low and medium doses of corticosteroids.**

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**INTRODUCTION** It is well known that high doses of corticosteroids can induce psychiatric disorders, especially the maniacal states. However there are only a few studies that investigate the effects of low and medium doses of such drugs used for a long period of time on the patient's mental health. **THE AIM** The aim of the study was to investigate the prevalence and severity of affective disorders among the patients using up to 40 mg of corticosteroids (prednisone or equivalent). **METHODS & MATERIALS** 30 patients during the corticosteroid therapy and 39 healthy controls were assessed with the use of the following questionnaires: Hypomania Checklist 16 (HCL-16), Beck Depression Inventory (BDI) and authors' questionnaire. The results were analyzed using SPSS Statistics version 12.5. **RESULTS** The results indicated statistically significant differences in the prevalence of hypomania and depression between controls and study group. There were no evident correlations between neither the dose nor the length of the therapy and the severity of affective disorders. **CONCLUSIONS** The study has shown that the usage of corticosteroids doses below 40 mg does have an effect on the prevalence of affective disorders. The occurrence of hypomania and depression was more common among the study group. To assess correlations further studies are needed.

**Keywords:** depression, hypomania, mania, steroids,, corticosteroids, affective disorders

## **Cortisol activity across psychiatric disorders.**

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Vulnerability to the psychosocial stress, coexisting with dysfunction of the hypothalamic-pituitary-adrenal (HPA) axis makes individuals more likely to develop psychosis. Patients with schizophrenia and anxiety disorders seem to have elevated basal cortisol secretion. The aim of this study is to establish stress hormone concentrations in patients with diagnosed schizophrenia and anxiety disorders and compare these results to healthy individuals. Three groups of participants were included into the study. First study group consisted of 20 patients with diagnosed schizophrenia. 15 patients with anxiety disorders represent the second study group. Third - control group - included 55 healthy individuals. First stage of study included only control group, and utilized cortisol concentrations measurement from saliva, blood and 24h urine sample. Second part (main study) involved all groups although focused on a salivary cortisol concentrations. Furthermore a study groups were examined using a Positive and Negative Syndrome Scale of Schizophrenia (PANSS) or Leibowitz inventory to assess development of Social anxiety disorders, according to their illness. A mean salivary cortisol concentrations in patients with schizophrenia and anxiety disorders differed significantly from results obtained in a healthy control. The study is on-going and preliminary results will be presented. Obtained results indicate that patients who underwent a treatment, and does not present notable clinical signs of schizophrenia, may have moderately lowered levels of salivary cortisol. This may be a reflection of relenting psychotic symptoms as well as a direct effect of atypical antipsychotic drugs on a HPA axis.

**Keywords: Cortisol schizophrenia anxiety**

**Prevalence of mental disorders in patients with suicidal thoughts and attempts.**

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Introduction: Suicide is highly prevalent in people with mental disorders, with clinical depression and substance use disorders as especially common causes. The risk is additionally elevated for people with coexisting mood disorder and borderline personality disorder. It is worth highlighting that suicidal or self-injurious behavior are among diagnostic criteria for BPD. Aim: To assess the prevalence of mental disorders among people with suicide attempts. Materials and methods: We retrospectively analyzed two groups of patients of Upper Silesian Medical Center in Katowice. The first were 712 patients consulted by psychiatrists at the Admitting Department in 2014-2015. The second were 102 patients diagnosed with BPD hospitalized in the department of Psychiatry and Psychotherapy in 2005-2016. Results: We found that 11,65% of psychiatric consultations in Admitting Department were performed because of suicidal thoughts or attempts. In the group of patients with suicide attempts, 11,83% were under the influence of alcohol, 10,84% had anxiety symptoms and 4,81% psychotic symptoms. The most common diagnoses were affective disorders – 25%, personality disorders – 14% and substance use disorders – 13,5%. In the group of patients hospitalized with BPD, 67,5% had a history of suicidal thoughts or attempts. Over one-fourth (26,08%) of patients with BPD with a history of suicide attempts had a coexisting alcohol use disorder. Conclusions: Patients with suicidal thoughts and attempts are frequently consulted by psychiatrists at the Admitting Department. In the majority of cases they are previously diagnosed with a mental disorder, most often affective disorders, personality disorders and substance use disorders.

**Keywords: suicides, psychiatric consultations, personality, disorders, borderline**

## **Art therapy on clinical practice.**

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**Introduction** Art therapy is defined as therapeutic techniques which make use of broadly understood art. In recent years it has gained popularity as a method that supports treatment and improves patients' mental state in a range of units used also on psychiatric wards. Due to an insufficient number of research concerning this sort of therapy its effectiveness remains questionable and exact guidelines for practising the technique have not been specified. **Aims** The aim of research was to determine the degree in which art therapy is widespread among physicians and health service related individuals in Poland and to investigate their opinion on their efficacy in the treatment of specific diseases. **Materials and methods** A survey was conducted during the International Medforum Psychiatry Congress 2016. The research tool was the researchers' self-designed questionnaire which consisted of questions evaluating popularization of art therapy in clinical practice and its efficacy in the treatment of specific diseases. **Results** Answers were collected from 46 physicians & 9 psychologists (mean age 44±11) 63.63% of which states to use art therapy in their practice. The most commonly used types were music and plastic arts therapy. Patients participate most willingly in those types of therapy. Art therapy is most commonly used in the treatment of schizophrenia, depression and bipolar disorder. In the clinicians' opinion art therapy is most effective in treatment of depression and psychosomatic disorders while least satisfactory in personality disorders. **Conclusions** Art therapy is commonly used form of treatment and opinions about its efficacy are average to good and rather similar in various medical conditions.

**Keywords:** Arteterpia, psychiatria

**Cullen revisited: what can historical perspective on psychiatric nosology teach us?**

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In the paper, the authors make an attempt at presenting the nosology of William Cullen, who contributed inter alia to the development of psychiatry as the creator of the important notion of “neurosis”. Authors would like to focus on the chapter on “madness” (*vesaniae*) from his Latin work *Synopsis nosologiae methodicae* (of which no complete translation into Polish exists), and situate it in the context of both the nosologies of the time and modern views on psychopathology (ICD-10). Moreover, the critical examination of Cullen’s text is a point of departure for proposals that integrate his perspective with that of today’s medicine, suggesting solutions to certain problems. Especially in some cases, Cullen’s view on aetiology of diseases may resemble the approach adopted in positive psychology, which underlines the significance of environmental factors for general mental and physical health. As far as language is concerned, the paper argues that the central element, around which Cullen’s medical discourse revolves, is disease, and particular disease names, although based on earlier studies and ultimately dating back to Classical Latin or Greek, have been given innovative senses.

**Keywords:** nosology, history, medical discourse

## **Research of knowledge about depression among high school and technical school students.**

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**INTRODUCTION** The theoretical part of the work describes symptoms and methods of depression treatment. The research part of work contains the comparison of knowledge about depression between high school, and technical school students, living in the countryside or in the city. **THE AIM** The evaluation of knowledge about depression in high school, and technical school students, living in the countryside or in the city. **MATERIALS AND METHODS** The research was conducted among students of Zespół Szkół Nr.1 in Gorlice and Zespół Szkół Techniczno Informatycznych in Gliwice. The number of respondents equals 244 including 129 boys and 115 girls. 53% are technical school students, 47% are high school students. The average age of the respondents was 18. The respondents were divided into groups according to sex, place of residence and type of school. As a research tool own questionnaire was used. **RESULTS** 54% of high school students and 36% of technical school students assess their knowledge as average. The low level of knowledge is declared by 30% high school students and 38% technical school students. 75% of the respondents believe that depression is a common problem. 86% of the respondents would grant support to the loved ones suffering from depression. The most effective method of treatment chosen among students in high school and a technical school was psychotherapy. Electric shocks are considered as a dangerous form of treatment and should not be applied in treating depression. **CONCLUSION** Based on the responses to the survey the high school students showed a medium level of knowledge about depression whereas technical school students' knowledge was at a lower level.

**Keywords:** Depression, electric shocks, psychotherapy, depression treatments

## **Psychiatric diseases amongst Polish society - assessment of the level of stigmatization and awareness of psychiatric disorders.**

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**Introduction:** Stigmatization is known as a public condemnation of a person or group of people and rejecting them in social interactions. The aim of this study was the assessment of the level of stigmatization of the psychiatric patients and evaluation of awareness of psychiatric disorders in Polish society.

**Material and methods:** An online survey was used to examine the level of stigmatization and attitude towards psychiatric patients. The survey was based on two stage questionnaire with 16 items regarding stigma and attitude towards mentally disturbed persons as well as Time Trade-Off exercise assessing interviewees' preferences.

**Results:** 1309 individuals (female 81,6%, male 18,4 %) participated in the survey, average age 23,8 (min.13, max.70, SD 6,09). 19% of respondents perceived psychiatric illness as a "shame". 7,5% of interviewees regarded themselves as better people than a patients suffering from psychiatric disorders (6% women, 16% men,  $p<0,05$ ), however 89% recognized themselves as tolerant (91% women, 81%men,  $p<0,05$ ).

**Conslusions:** The level of stigmatization in Poland is high and the knowledge about psychiatric diseases and attitude towards mentally disturbed is low. Women are more tolerant than men, but results suggest that people in Poland are afraid of psychiatric patients and feel discomfort in their company.

**Keywords:** stigma, psychiatric disorders

## **The perception of interpersonal relationships by young adults - differences between sexes.**

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The role and form of interpersonal and sexual relationships between young people has changed significantly over the past decades. This evolution could be perceived as caused by progressing feminization, globalization and the development of new technologies – Internet, hook-up apps. The aim of the study was to assess differences between sexes regarding the perception of expectations from sexual relationships. An anonymous questionnaire was conducted in electronic form and shared via social media with people 18-30 years old. The questionnaire contained 6 questions with specified answers, 6 with open spaces to be filled with numbers and 21 concerning the perception of a relationship in a 0-4 scale of importance. The questionnaire was completed by 5532 people (4394 female, 1138 male). Almost every question showed a statistically significant difference between sexes except the definition of so called Friends with Benefits. Women should be perceived as more eager to be thinking about the relationship as an important part of their life than men. They have less problems with the emotional aspect of a relationship and they are more likely to sacrifice themselves for partners. On the other hand males' answers show more attachment to the vision of a relationship as an idyll without problems. According to the obtained answers it should be stated that women and men define sexual relationship differently. These differences could lead to many misunderstandings between partners. Surprisingly, the obtained answers are compatible with stereotypical differences between sexes, despite the evolution of today's society.

**Keywords:** sexes, relationship, questionnaire



**ORTHOREXIA NERVOSA – EATING DISORDER**

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**Introduction:** Orthorexia nervosa is an eating disorder, the fixation on eating healthy products exclusively. This disorder is of psychological nature. People with orthorexia avoid eating particular products; their attention is focused on meal planning, counting of calories, checking the nutrient content, checking labels with ingredients in order to care about the health. Orthorexia may lead to severe undernourishment, and in extreme cases it may even lead to death. **Aim:** The aim of this research was to check whether or not the tendency to orthorexia among nursing students. **Experiment sample and methods:** As a method in this research, diagnostic survey was applied. As an experimental tool the authorial questionnaire was used; it consisted of personal survey and two questionnaires measuring the risk of orthorexia (Bratman's Test and ORTO-15 Test). 130 nursing students of Medical University of Silesia participated in this research, including 122 women (93,85%) and 8 men (6,15%). **Results:** After the analysis of Bratman's Test, no student from the examined group was diagnosed with orthorexia (0%), 21 people from the examined group are "healthy food fanatics"; they were classified as a higher risk group (16%). 109 people were not diagnosed with orthorexia (84%). The analysis of ORTO-15 Test showed that 6 people from the examined group (4,6%) were within limits of optimal quota (40 points), 32 people (24,6%) had results below optimal quota, which is the evidence for their tendency to orthorexia. 92 of the examined people (70,8%) are healthy, without any tendencies. Both tests give similar results when compared. **Conclusions:** Most of the examined nursing students does not display any tendencies towards orthorexia.

**Keywords:** orthorexia nervosa, an eating disorder, nutrition

INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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KATOWICE - POLAND



## **SESSION OF STOMATOLOGY**





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## Does the chewing gum has an impact on temporomandibular joint?

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**Introduction:** Temporomandibular joint (TMJ) vibration analysis (JVA) is the electronic recording of TMJ sounds, or, more accurately, vibrations occurring in the joint. Utilizing vibration transducers called accelerometers, a characteristic wave pattern is created for the various types of internal joint vibrations. The aim of the study was the evaluation the impact of chewing gum on auscultatory changes in the temporo-mandibular joint

**Materials:** Clinical examination involved a group of 60 dental students with complete dental arches in age from 23 to 27 years.

**Methods:** The clinical examination were performed among the group of patient and included a detailed questionnaire providing information on the patient's general health status and functional examination of the stomatognathic system including assessment of the presence of an asymmetric trajectory of the mandible during mouth opening/closure, lateral movement of the mandible and muscle tension. Helkimo anamnestic index (Ai) and clinical dysfunction index (Di) were used to determine symptoms and signs respectively. The examination of TMJ vibration were performed with BioJVA (BioResearch System, USA) in each student. The outcomes were compared and various statistical tests were used.

**Results:** Over 63% of patients suffer from headaches. 77.5% of patients chew gum over 5 minutes, moreover 60,3 % feel pain after or during chewing gum. The examination of TMJ vibration showed auscultatory changes in the TMJ after chewing gum.

**Conclusions:** 1. In patients with known auscultatory changes is not recommended to use chewing gum 2. Helkimo index is a well-founded index to assess TMD in a specified population.

**Keywords:** BioJVA, joint vibration analysis, gum chewing

## **Joint track measurement in patients with mandible condyle fracture treated with conservative and surgical methods**

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Introduction: Mandible condyle fracture is common injury in facial traumatology. It can be treated with conservative and surgical methods. The aim: The aim of the study is to measure joint track in saggital plane in patients with mandible condyle fracture treated conservatively and surgically. Materials & methods: Material consist of 90 patients with isolated mandible condyle fracture treated in Maxillo-Facial Surgery Clinic at Medical University of Silesia. Patients are divided into six groups - 20 treated conservatively, 9 treated surgically with intra-articular anastomosis, 13 treated surgically with extra-articular anastomosis, 19 treated with condylectomy, 9 treated with condylectomy and mandible ramus osteotomy, 20 patients without mandible condyle trauma - control group. Joint track was measured with Cadiax Compact 2 six months after treatment. Results and conclusion Average joint track in control group was 12,71. At patients treated conservatively joint track was average 10,54. Patients treated surgically with extra-articular anastomosis - 9,93, with intra-articular anastomosis - 9,93, with condylectomy - 4,40, with condylectomy and ramus osteotomy - 4,59. Relative to control group joint track was 53% smaller in patients treated surgically and 17% smaller in patients treated conservatively.

**Keywords: CADIAX, joint track, manfible condyle fracture, surgical and conserevative mandible condyle fracture treatment**



## **Resin infiltration – an Evaluation of a minimally invasive method of white spots treatment using QLF and Diagnodent : a case report.**

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Background Nowadays, the number of patients for whom a beautiful, healthy smile is very important has increased. This case present patient who has both caries and fluorosis spots, choosing the treatment method may be problematic, due to different etiology of these lesions. Modern minimally invasive dentistry suggests resin infiltration. Case Report : A 22-year-old patient's main expectation was to improve smile aesthetics. In clinical examination the prevalence of both fluorosis and white caries was alleged. In order to assess the character and level of lesions advancement, the photographic documentation was collected, indicators were specified and 128 tooth surfaces were examined, using devices such as Diagnodent and QLF system. Resin infiltration (Icon DMG, Germany) was chosen as a treatment method. Procedure has been performed according to the specific producer's guidelines. Clinical evaluation of undergoing treatment was made after procedure. Measurements with Diagnodent and QLF system were taken for the second time. Conclusions: Simultaneous occurrence of caries lesion and fluorosis is not only a diagnostic problem but may also cause difficulties when choosing proper treatment method. Resin infiltration is a procedure of early caries lesions treatment. Furthermore, this is a minimally invasive method that improves aesthetics through masking white spots and postponing progress of caries lesions. Recently, it is used increasingly to treat fluorosis and other lesions resulting from enamel mineralization disorders e.g. hypomineralization , MIH

**Keywords: resin infiltration**

## **“Epidemiology of natal and neonatal teeth: a review of cases reported to the Department of Pediatric Dentistry in Zabrze”**

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Introduction: Natal teeth are present in the oral cavity at the moment of birth, neonatal teeth emerge through the gingiva during the first 30 days of life. The prevalence of this phenomenon ranges from 1:2000 to 1:4000 births. There are many contributory factors, such as infections, fever, trauma, hormonal stimulation, vitamin deficiencies or maternal malnutrition during pregnancy. A major role is attributed to superficial position of a germ. The aim: Determine the prevalence of natal and neonatal teeth among children admitted to the Department of Pediatric Dentistry ACS in 2012-2017. Evaluation of factors that may affect the incidence of natal and neonatal teeth and the consequences of their presence to further proper development of the child. Materials & Methods: In the years 2012-2017 23 patients were diagnosed with the presence of natal or neonatal teeth. We conducted a survey with parents. The survey consists of 43 questions about aspects: social, diagnosis, treatment and child's development. 15 people answered the questionnaire. It was not possible to contact the parents of 6 children, 2 parents did not agree to participate in the study. Results: Among the patients were 6 women and 9 men. 13 patients were diagnosed with natal teeth and 2 patients with neonatal teeth. Among 8 cases were found single tooth. 7 patients were diagnosed with 2 teeth. The teeth were extracted among 9 children. Conclusions: Natal and neonatal are not common disorders, however the exact reasons requires further research. Moreover, the proper diagnosis and clinical management is crucial in that cases.

**Keywords: Natal teeth, neonatal teeth, premature teeth eruption**

## **Influence of background on visual matching precision.**

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Accurate restoration colour matching to tooth shade is important during treatment in order to obtain satisfying aesthetic effect. There are many factors that may influence colour matching precision. The aim of study was to determine the influence of gender of the subject being examined, as well as background (BG) colour, on colour matching precision. Examinee's (50 people) were asked to match into pairs compatible colours from three VITA Classical shade guides, one by one on five BG corresponding to different clinical situations (white, beige, red, green, black). The study was conducted in identical lighting conditions. The examined group consisted of 35 women and 15 men, aged 19-31. Overall, the proportion of correctly recognized shades was 51.1%. Depending on the BG colour, correct recognition ranged from 43.4% (red BG) to 62.6% (beige BG). Women more effectively recognized the unique shades, with an average of 53.0% correct, whereas men achieved a result of 46.3%. The effectiveness of fifth year students and trainees was found to be significantly higher in comparison to their younger colleagues. Representatives of both genders made the best matching of colours on a beige BG. The worst results were shown by women on black and red BG, and by men on red and green BG. The best BG colour for matching shades is beige. Colour should therefore be matched against a BG of other teeth or beige tiles. Besides what has been shown here, the safest colour for female dentists to surround themselves with is a dental surgery of white and green, whereas for men it should be white and black. Colour matching on a red BG should be avoided. Broader experience is far more conducive to proper colour matching.

**Keywords: background, matching colour, tooth shade**

## **What is behind fibrous hyperplasia of the oral mucosa? - Histopathological verification of mucosal overgrowth.**

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Introduction (Hyperplasia of fibrous tissue is defined as a limited proliferative lesion in the oral mucosa, which develops in reaction to mechanical injury or more frequently to chronic, topical irritation produced by e.g. the long-term use of dentures. These lesions are not only a hindrance to prosthetic treatment, but can develop into cancerous lesions.)/The aim (The aim of the study was the analysis of clinical cases in relation to histopathology of the patients undergoing surgical excision of the fibrous tissue overgrowth at the Outpatient Clinic of Oral Surgery and Implantology in Bytom.)/Methods&Materials (A retrospective analysis of medical records of 50 patients including 36 women and 14 men who underwent surgery due to the presence of fibrous overgrowth of oral mucosa. The nature of the lesions were assessed as well as their size and location.)/Results (The analysis led to the following diagnoses: 32 cases (64%) of overgrowths of the mucosa (Hypertrophy mucosae), 20 cases (40%) of chronic inflammation of the mucous membranes (Stomatitis chronica). Of all the cases, 4 (8%) had the characteristics of dysplasia.)/ Conclusions (1. Fibrous overgrowths within the oral mucosa should be treated surgically. 2. The resulting clinical material should always be subjected to histopathological analysis. 3. Patients who have developed lesions with dysplasia require frequent clinical examinations and further treatment in case of any lesions with a questionable prognosis).

**Keywords: fibrous overgrowths, oncological vigilance, chronic stomatitis**

## **New concept of using 3D printed surgical guides in dental surgery.**

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**Introduction:** Dental surgeons often face problems with insufficient bone volume preventing ideal implant placement. Alveolar deficiency can be rebuilt with autogenous bone graft augmentation, accepted as a golden standard in such procedures. There are many different ways to collect autogenous bone graft blocks. Described concept involves using 3D printed surgical guide, which can make the operation faster and allows surgeon to transfer treatment plan into real operation. **Aim of the study:** The aim of this study is accuracy evaluation of obtaining bone graft block using 3D printed surgical guides. **Material and methods:** CBCT scans of 5 porcine heads were taken. For each head 3 donor sites were chosen. Access to every donor site was virtually planned. Alginate impressions were taken and used to make casts. Casts were scanned and superimposed on CBCT scans. Surgical guides were designed and 3D printed for virtual models. Obtaining bone graft with trepan bur in porcine models had been carried out using guides for drilling. After drilling new CBCT scans were performed and were superimposed on previous virtual models. This allowed comparison of obtained and virtually planned bone graft block. Accuracy of the procedure was evaluated. **Results:** Obtained results are promising. Collected bone graft blocks using surgical guides were taken with high precision and coincide with previously virtually planned blocks. **Conclusions:** 3D printed surgical guides may give oral surgeon opportunity for carrying out an accurate bone graft obtaining. This may provide faster and less invasive operation. However, described technique needs further research.

**Keywords: surgical guides, bone graft**

## **The Michigan splint- effects of treatment and abandonment of therapy.**

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The Michigan splint is classed as stabilization and relaxation splint. Indications to its usage are: painful and painless muscle-related temporomandibular disorders, tension type headache, parafunctional habits. The Michigan splint is usually worn for several weeks, to eliminate pain symptoms and in patients with parafunctions-even for few years. Splint is used at night and additionally during daytime in psychomotor activity./The aim of this study was to investigate the effects of splint therapy and possible outcomes after cessation of therapy./Research material includes 35 randomly chosen patients from the Clinic of Temporomandibular Joint Dysfunction in Zabrze dated from 2011 to 2015 and survey on the process of treatment and current complaints.The gathered material was analyzed with regard to the age, sex, status before therapy, duration of splintwearing, treatment results, possible reasons for abandonment of the therapy and current condition of the stomatognathic system./It has been proven that the largest amount of patients, treated with Michigan splint, report feeling of stiffness, numbness and discomfort as well as muscle pain, standing at 72% and 50% respectively. Muscle symptoms relate mainly to the temporal muscle(50%) and masseter muscle(33%). 28% of patients are affected by pain in the region of TMJ. Pain intensity on VAS scale was VAS1=3,9 and VAS2=1,8, whereby up to 81% of patients indicate that symptoms were partially or completely resolved. The average duration of wearing splint in the study group was 8 months, 7 hours per day./Using the Michigan splint brings measurable health benefits and discontinuing splint therapy leads to symptoms exacerbation.

**Keywords: Michigan splint, TMJ disorders, TMJ treatment, headache, masseter muscle, temporal muscle**

## **The role of dentist vs. the role of the Internet in proper oral hygiene principles promotion.**

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Introduction: There are various sources of knowledge about oral hygiene therefore with the growing contribution of the internet in everyday life, its usage in finding information is more common. Oral hygiene is very important area that every patient should have basic information about. The aim: The aim of the study is to assess the role of dentists and the internet in promotion of the information on proper oral hygiene. Materials and methods: There were 201 questionnaire surveys on knowledge about oral hygiene, caries prevention and its source. Various video regarding oral hygiene manual embedded on the youtube.com website have been analyzed in the context of the completeness of their content. Results: Surveys have shown that more than half of the surveyed patients weren't provided any information about proper oral hygiene practices by their dentists. The search regarding oral hygiene videos has shown that they are available on the internet and that their content value is satisfying. Conclusions: Caring for proper oral hygiene is a practice that dentists often overlook. The Internet can be a helpful tool in spreading good habits among patients.

**Keywords: oral hygiene, youtube**

## **Evaluation of augmentation procedures effectiveness using Cone Beam Computed Tomography and iCATVision software.**

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**INTRODUCTION** Bone and soft tissues reconstruction should precede dental implant treatment in most cases. The most common techniques are: GBR/GTR , Alveolar Ridge Splitting, Maxillary sinus lift, Autogenous, allogenic and heterogenous bone graft. The proper technique is used in correlation with alveolar bone loss type, which can be determine by one of known bone defect classifications (ex. Ferrer-Scherrer). **THE AIM** The aim of this research is to evaluate bone density and anatomical conditions for patients before dental implant treatment, proper choice of augmentation procedure and evaluation of its effectiveness after healing period. **MATERIALS & METHODS** To evaluate clinical case properly it is necessary to use CBCT. Research material includes medical records of 8 patients treated at the Departament of Dental Surgery and Implantology over the period 2010-2015. After 4-8 months from the augmentation procedure the CBCT examination was made once again to evaluate its effectiveness. Bone volume and radiological density was evaluated. Analysed material was made with computed tomograph General Electrix and volumetric tomograph Gendex CB-500. For measurments of bone volume and density iCATVision software was used. Bone was measured in three dimensions, its density was assessed with Hounsfield scale both prior to the procedure and after it **CONCLUSIONS** Augmentation procedures was effective in all cases. Proper bone volume and quality dental implant treatment was achieved no matter which augmentation technique was used. The golden standard is autogenous bone block graft procedure which allows to achieve optimal bone volume and quality in a reasonably short period of time.

**Keywords:** implantology, augmentation procedures, CBCT



## **Grinding on screen - in other words pyrometric measurement of the working drill temperature 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 treatment may be the source of iatrogenic pulpitis, which can lead to the death of the pulp. 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 amount of heat produced in the process of grinding is affected, among other things, by the level of drill wear. The aim of the project was the measurement of the temperature generated by the working drills during the grinding of the post-extraction teeth crowns. For the measurement, there were utilised two sets of drills from different producers. Each set contained two drills in the form of a cone with a rounded edge 1,6 mm in diameter. The only difference between them was the thickness of coating. In the single session, three crowns were being ground with the use of each set of drills, which was conducted complying with the commonly accepted standards. After the treatment, the drills were sterilised. The generated temperature was registered by the thermo imaging camera. The rise of the drill temperature correlates with its wear level resulting from its usage and sterilisation. The drills produced by two various manufacturers were characterised by different wear levels in relation to the same number of the prepared teeth. The regular drill change is essential in order to prevent iatrogenic pulpitis from occurring. The quality of the performed operation was deteriorating with the increasing wear level.

**Keywords:** thermo imaging camera, grinding, drill

## **DIAGNOcam – new perspective versus reliable methods adopted in cavity diagnostics.**

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The most frequently used method in the diagnostics of cavity occurring on the proximal and occlusal surface is the bitewing radiograph. In the process, teeth are exposed to X-ray that filters through carious tissues, which results in bright areas on an X-ray plate. DIFOTI – DIAGNOcam device has been recently launched. It utilizes the transillumination technique, that is, laser light is used to create images resembling X-ray images, but without emitting ionizing radiation. The laser light penetrates the tooth structure and sends its image to the camera. The areas affected by caries disturb the light penetration and finally they appear as shaded marks. The aim of the project was to compare both method of caries diagnostics on the proximal and occlusal surface using the standard method of the bitewing radiograph and the transillumination technique. The caries diagnostics of the proximal surface was conducted on the patients of ACS in Bytom. In the project, the diagnostic usefulness of both methods was compared, paying special attention to the presence and range of the occurring carious lesion, the time needed to follow the procedure as well as the degree of patient satisfaction. The most crucial aspect of the proper patient therapy is his right diagnostics. Only when such condition is fulfilled are we able to determine the appropriate way of treatment. The right diagnosis will let us choose less invasive methods or will lead us to more advanced procedures. Apart from the traditional diagnostic methods, it is advised to also try new technologies. The transillumination technique is a good alternative for the conventional X-ray, especially when there appear to be some contraindications.

**Keywords: DIAGNOcam, diagnostics, DI-FOTI**

## **Pain and orthodontic treatment-survey analysis among orthodontic patients.**

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The review of professional literature and practice shows that the orthodontic treatment is often accompanied by variable painful symptoms./ The purpose of the study was to evaluate subjective feelings of patients' painful illnesses treated with various types of orthodontic devices, including pain, localization, and time./ The study material was questionnaires among patients of the orthodontic clinic at the SUM Orthodontics Department. All patients were undergoing orthodontic treatment with removable or fixed appliances. The survey was consisted of 11 questions concerning: the time of pain appearance related to a particular orthodontic action, the type of pain experienced, location and duration of the pain./The study group consisted of 40 patients, 21 females and 19 males. 15 patients were treated with removable appliances and the rest with fixed appliances. Satisfaction with the teeth appearance showed 66.6% of girls and 78.9% of boys. 19 girls and 18 boys felt the need for orthodontic treatment. Immediate pain – was reported by 13 girls and 9 boys as soon as a fixed or active removable appliance was put on. One day after the placement of appliance, 57.1% of the girls suffered pain, and only 9.5% after 2 days. 47.4% of boys felt pain after day one and 10.5% after second day. Most of respondents reported continuous pain (43% and 47.3%, respectively) and its source was localized in the teeth./ Despite the declaration of satisfaction with the teeth appearance, 90.4% of girls and 94% of boys felt the need for orthodontic treatment. Increased sensitivity to pain among girls has been demonstrated. Increased pain sensitivity among girls has been demonstrated.

**Keywords:** orthodontic treatment, removable appliance, fixed appliance, painful symptoms

## **Analysis of the parents' knowledge about xylitol.**

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**Introduction** Xylitol (sugar from birch) is 5-carbon polyhydroxy alcohol which belongs to a group of natural sugar substitutes. Its beneficial qualities include: reduced calorificity, similar level of sweetness as sucrose, low glycemic index and anticariogenic properties.

**Purpose** The purpose of the research was evaluation of knowledge about xylitol among parents of children aged 0 – 18 years.

**Materials and methods** Questionnaire research was carried among parents of children treated in Pediatric Dentistry in Zabrze and Bytom. The survey included 35 questions.

**Results** The study included 124 respondents. 85.5% of the respondents have heard about the foods sweetened with sugar substitutes. The most commonly used source of information about food products sweetened with sugar substitutes were successively: press or online media articles, television programs, family and friends. In the daily diet white sugar replacement was used by 42 respondents (33.9%), while 34 persons participating in the study (27.4%) stated that they were using xylitol. Knowledge of anti-caries properties of xylitol had only 36.3% of respondents however, over 80% of the respondents said they would have to use xylitol in their and their children diet, if they knew about its anti- caries effects. The usage of oral hygiene products which contain xylitol in their composition was declared by 8.9% of respondents.

**Conclusions** Study presented that general knowledge among parents about sugar substitutes is at a high level. Nevertheless specific analysis indicated that knowledge about xylitol, its advantages, side effects and contraindications is insufficient and requires improvement.

**Keywords:** xylitol, questionnaire, caries, pedodontics

## **Evaluation of knowledge about denture care among patients with removable dental prosthetics.**

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**Introduction** The main aim of prosthetic treatment is to restore the function and morphology of missing tooth and tissues by execution of denture. The last stage of prosthetic treatment consists of denture care instruction. Patient is instructed how to use and clean the denture to keep it in good condition. It allows to avoid further problems of oral diseases. The aim The aim of this study is to evaluate the knowledge about denture care among patients with removable dental prosthetics. **Methods & Materials** Patients were asked to answer the questions in the anonymous questionnaire. Questionnaire consists of 23 questions divided into two parts; metric data and dental prosthetics hygiene. Dental prosthetics hygiene part was rated like a test. For each correct answers, patient received 1 point. Total amount of points (final score) was counted. Patients filled the questionnaires after the last appointment, on a waiting room. **Results** 83 questionnaires were analyzed. Three of them were excluded. The group consisted of 47 woman and 33 man. For 23,8% (19) people dental prosthetics (executed during prosthetic treatment) was the first denture. Most of patients (86,3%) know that dentures should be taken out during nighttime. Final score does not dependent on: sex, first or other denture and receiving denture care leaflet. **Conclusions** This study presents that patients have basic knowledge about denture care. Nevertheless more specific information about denture care tools and brushes is not known. This problem requires further analysis. Procedures should be performed to increase the knowledge about denture care among patients.

**Keywords:** denture care, dental prosthetics

## **Clinical comparison of the effectiveness of three prophylactic toothpastes in removing stains**

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Introduction: Nowadays people care about their dentition a lot. They try to prevent caries, gingivitis or tooth loss. Prophylaxis is starting to mean more than invasive methods of treatment. In order to have a beautiful, white smile, people often visit dental offices to remove stains from their teeth and therefore sandblasting is rather expensive, they're looking for some other way to achieve it. Object: The aim of the study was to assess the effectiveness of three selected prophylaxis toothpastes for cleaning in removing extrinsic stains. Material and method: In the research, we used following products: CleanPolish from Kerr, Detatrine from Septodont and Cleanic from Kerr. Research included questionnaire and preliminary study containing diagram and shortened Loben Stain Index. Questionnaire contains questions about the habits that conduct to the formation of deposits. Determination of the intensity and extent of stains was made before and after the procedure of cleaning the teeth. Afterwards, the data was taken, developed and the effectiveness of different products was compared. In the research, only anterior teeth were taken into consideration (shortened Loben Stain Index). Research was conducted by double-blind method. Results: All the dentifrices were good tolerated. The most effective in removing deposits turn out to be Cleanpolish from Kerr toothpaste. However any of them weren't able to remove all deposits. Conclusions: Prophylaxis toothpastes, despite their increased abrasibility, can't replace sandblasting in removal of dental deposits. Yet they can reduce them a lot.

**Keywords: toothpastes, prophylaxis, dental stains, Loben stain index**

## **Planar and three-dimensional imaging in assessment of maxillary sinus pneumatization.**

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Introduction. The X-ray methods are widely used in the diagnostic of odontogenic maxillary sinus diseases. In a clinical follow-up study in most cases two-dimensional (2D) and 3D data are compared. The aim of research was to identify the maxillary sinus pneumatization type on panoramic radiographs (PT) and cone-beam computed tomography (CBCT) scans in health and chronic odontogenic sinusitis and to compare all the X-ray data. Materials and methods. In 100 patients with chronic odontogenic maxillary sinusitis and in 40 healthy patients PT and CBCT data were analyzed to recognize the degree of pneumatization of the maxillary sinus. Results. The CBCT data showed excessive pneumatization at the side of maxillary sinus inflammation in 94 patients, the moderate type was revealed in 4 people, the hypopneumatization was detected in 2 patients. Based on planar imaging a higher degree of pneumatization was found in 81 cases, the moderate variant was discovered in 16 PT and the hypopneumatized sinus was evaluated in 3 radiographic images. On the opposite side and in normal cases predominated highly pneumatized anatomical variation of maxillary sinus. By definition of maxillary sinus pneumatization type the correlation was established among the 2D and 3D data ( $p < 0,05$ ), that illustrates the comparability of obtained results. Conclusion. Both 2D and 3D image-based registration methods may be performed for specifying the characteristics of the maxillary sinus pneumatization and assessment of changes during the follow-up period. An increased probability of developing odontogenic maxillary sinus disease is determined by the high degree of pneumatization.

**Keywords: maxillary sinus, X-ray methods, pneumatisation**

**Are we really well informed? Survey study on general rules in oral health care and hygiene awareness beneath people studying and working in dental department of Medical University of Silesia.**

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Introduction: It is generally accepted that people connected with dentistry are well informed in the general rules of oral health and hygiene. They are often asked for advice, but should we really trust in what they recommend? Aim of the study: The aim of our study was to check out the knowledge of oral health matters beneath people studying and working in dental department of Medical University of Silesia. Materials and methods: Survey was conducted on group of 195, which we divided to three groups – students, doctors and dental assistants. Using IBM SPSS Statistics 23 statistical tests – chi-square test of independence, Kruskal-Wallis i Mann-Whitney were performed, taking p im that they don't need to ask for any hygiene instructions. Conclusions: Chosen group of people related to dentistry has quite good knowledge, but don't use it according to themselves. It leads to a question, do they see importance of making patients aware of good oral hygiene as a basis of oral diseases prophylaxis.

**Keywords: dentistry, oral health care, hygiene, awareness, survey study**



## **Awareness of methods of feeding infants and small children among parents of children with malocclusions and impact of these methods on development of malocclusions.**

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**Introduction:**Awareness of occurrence of dysfunctions and parafunctions leading to development of malocclusions displayed by parents is a crucial factor in orthodontic prevention. There are multiple scientific contributions confirming the relation between dysfunctions concerning feeding and presence of malocclusions. The aim of the study was estimation of the knowledge of parents of children with malocclusions of the appropriate methods of feeding children in the period of infancy and early childhood. **Material and methods:**The material consisted of a survey including 37 questions concerning the method of feeding a baby and the use of pacifier, information on the respondent and his/her knowledge of occlusal abnormalities aetiology. The survey was conducted among over a hundred parents of patients treated at Department of Orthodontics of the Warsaw Medical University. Extraoral and intraoral examinations were performed on the children covered by the survey and their orthodontic diagnosis was established. **Results:**The total number of 102 respondents aged 28-58 included 75,5% of women and 24,4% of men. The research has found that the age of mothers and the number of children they have doesn't affect the level of parents' awareness. The lowest level of awareness concerned questions about the duration of single breastfeeding/ bottle-feeding, age at which other type of feeding than breastfeeding/ bottle-feeding should be introduced. **Conclusions:**Level of awareness of the research issues among parents is low. There is a need to raise awareness of caregivers concerning methods of feeding children in the period of infancy and early childhood in order to minimize the risk of malocclusions.

**Keywords:** methods of feeding, development of malocclusions

**Methods of feeding children in the period of infancy and early childhood, parafunctions related to the use of pacifier and their impact on the development of occlusal abnormalities classified as types of posterior occlusions and buccal occlusions.**

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Introduction: Aetiology of occlusal abnormalities is multifactorial. Apart from genetic predispositions, other factors leading to development of occlusal defects are dysfunctions and parafunctions. Aim of the study: The aim of the study was to assess the feeding methods in the period of infancy and early childhood and their impact on the development of posterior occlusion. It was also established whether the parafunction related to the use of pacifier with the view of comforting a baby and the time of its use predispose a child to buccal occlusion. Material and methods: The material consisted of a survey including 37 questions concerning the method of feeding a baby and the use of pacifier, information on the respondent and his or her knowledge of occlusal abnormalities aetiology. The survey was conducted among over a hundred pairs of parents of patients treated at Department of Orthodontics of the Warsaw Medical University. Extraoral and intraoral examinations were performed on the children covered by the survey and their orthodontic diagnosis was established. Results: 38 patients (37,25%) out of 102 examined patients were diagnosed with different types of posterior occlusions, while 32 patients (31,37%) were diagnosed with different types of buccal occlusions. The study revealed that the feeding method (breastfeeding -48%, bottle-feeding -19,6%, combined breastfeeding and bottle-feeding -31,37%) or the type of teat used for feeding (orthodontic -32,35%, non-anatomic -19,6%) do not affect the development of posterior occlusions. The time of harder foods introduction into a child's diet was deemed statistically significant. Conclusions: The method of feeding a child in the period of infancy and early childhood selected by parents has no impact on occurrence of any type of posterior occlusion, while the time of hard foods introduction into a child's diet may contribute to development of posterior occlusion.

**Keywords: methods of feeding, pacifier, posterior occlusions, buccal occlusions**

## **C-Reactive Protein (CRP) and its Association with Periodontal Disease.**

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CRP is a pentameric plasma protein with homologs that participate in the systemic response to inflammation. It is regulated by cytokines like interleukin-6 (IL-6), interleukin-1 $\beta$  (IL-1 $\beta$ ) and tumour necrosis factor- $\alpha$  (TNF- $\alpha$ ). CRP is considered a key biomarker of systemic inflammation. It is mainly synthesised by hepatocytes in the liver and can be produced locally by arterial tissue. CRP can be measured several methods. Periodontitis is defined as the inflammatory disease of the supporting tissues of the teeth caused by specific microorganisms or groups of specific microorganisms, resulting in progressive destruction of the periodontal ligament and alveolar bone with pocket formation, recession or both. My friend and I have conducted the research on how C reactive protein was associated with periodontal disease. It was apparent from the results that CRP appears in the serum and blood of patients with some forms of inflammatory oral disease. To fully confirm that elevation in CRP is due to periodontal infection, it is essential to see whether periodontal treatment is effective in reducing CRP level. Following successful periodontal basic therapy, bacterial load is significantly reduced, while antibody titers to the specific pathogens are improved. As a result of these changes, local inflammation significantly decreases and there is a significant improvement of the clinical parameters. During my presentation, we will talk about the patients we were examining before and after the treatment, and how we overcame with the patients problems. We revealed some existing diseases that could cause inflammatory ongoing process in a mouth.

**Keywords: CRP level, Periodontitis, inflammation, basic periodontal treatment**

INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF PUBLIC HEALTH AND HEALTHCARE I**

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## **The assessment of overweight and obesity in children from Kudowa Zdrój in the years 2014-2016**

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Body mass index (BMI) is the most popular indicator used to determine overweight and obesity. Overweight for children is defined as a BMI above the 85th percentile (pc) and obesity is defined a BMI above the 97th pc. However, there are also other useful methods such as waist circumference and waist-to-height ratio (WtHR) which are more specific to abdominal obesity.

The study assesses the frequency of overweight and obesity in children from Kudowa Zdrój in the years 2014 - 2016.

Study group consisted of children aged 5-17 years old, students from Primary and Middle School in Kudowa Zdrój. In 2014- 543 children (mean age  $10.11 \pm 2.70$ ), in 2015- 541 children (mean age  $9.76 \pm 2.69$ ), in 2016- 513 children (mean age  $10.29 \pm 2.56$ ). All children were examined by students from Wrocław Medical University. Following parameters were assessed: BMI, WtHR and circumferences of waist. BMI were evaluated in Z- Scores. RESULTS Overweight (BMI Z-Score  $> +1SD$ ) was diagnosed in 2014 in 25.9% of children, in 2015-28.4%, and 2016- 29.2%. Obesity (BMI Z-Score  $> +2SD$ ) was observed in 2014 in 8.9% of children in 2015 -9.9% in 2016- 12.2%. Elevated WtHR ( $> 0.5$ ) was present in 2014 in 7.9% of children, in 2015-12.5 % in 2016 and in 2016-11,5%. Waist circumference ( $> 90$ pc) was exceeded in 2014 in 13,9% of children, in 2015 - 17.3% and in 2016- 16.5%.

Overweight and obesity is rising problem among children from Kudowa Zdrój. The high percentages of children with BMI  $> 97$ pc and increased waist circumference, which may indicate the metabolic syndrome, are alarming. It is necessary to introduce the educational program in order to reduce the weight of children.

**Keywords: overweight, children, percentile**

## The image of the man as a male midwife in the modern society

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Tocology is one of the oldest professions dealing with a women in different periods of her life. This profession has been associated with women since many years. The traits of character and gender specific qualities have had huge impact on the choice about working in this vocation.

The aim of the study was to find out about the opinion of women and men about a man working as a male midwife. Participants were 20-35 years old.

It was used an original questionnaire. It took part 96 people, including 84 women and 12 men. The participants were informed about the volunteering, anonymity of participation in the research, and the using results for scientific purposes only.

More than a half of the interviewees asked, whether a man has good traits of character so that he can work as a male midwife or not, answered "yes" (53,1%). 72,1% of the participants emphasized that a man will be a good male midwife. They mentioned following qualities: empathy, professionalism, patience. When it comes to the appearance, they told about height, masculinity and a fit body. 73,9% of the participant would trust a male midwife. 57,3% of the pregnant women said that a male midwife wouldn't be found as a good employer and a tocology shouldn't be their vocation. However, 40,6% of the interviewees declared that there should be more man working in this profession.

The approach to the male midwife has changed . The society perceives in a positive way and accept man in this profession. The stereotype about this profession as only for women is worrying.

**Keywords:** man, a male midwife, society

## **Alimentary habits and physical activity in elected groups of diabetics and healthy people.**

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Behavioural factors (proper mode of nourish and physical activity) have significant influence for civilization diseases developing, such as sclerosis, diabetes, arterial hypertension, obesity.

Alimentary habits evaluation and physical activity level assessment in chosen groups of polish population.

Surveys were carried out on a group of 518 respondents: 275 students (age of  $22,9 \pm 2,14$ ), 179 professionally active (age of  $37,2 \pm 12,5$ ), 64 not professionally active (age of  $69,2 \pm 9,6$ ) and 113 people suffering for diabetes (age of  $52,7 \pm 20,1$ , average time of diabetes durance  $14,3 \pm 9,3$  year, HbA1c:  $7,96 \pm 2,57$ ). The questionnaire was conducted by way of social network Facebook (313 surveys) and in traditional mode (205 surveys). Alimentary habits data were collected wherewithal questionnaire devised by CBOS and data about physical activity were polled by the aid of IPAQ questionnaire.

People who committed healthy style of nutrition had lower BMI than those who committed unhealthy style of nutrition ( $23,60 \pm 4,60$  vs  $25,65 \pm 6,24$ ;  $p < 0,001$ ). Analogously in diabetics group ( $27,90 \pm 5,76$  vs  $31,11 \pm 8,16$ ;  $p = 0,063$ ). Individual quality of alimentary habits were also analysed.

1. Unhealthy nutrition and low physical activity associated with higher body weight.
2. This contradict with theory about congenital tendency to obesity.

**Keywords: diabetes, alimentary habits, physical activity**



## CDI (Clostridium Difficile Infections) in elderly – a new epidemiological problem

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A growing number of infections involves with an increase in mortality, which is a result of Clostridium difficile-associated diseases occurring (anaerobic, Gram-positive bacteria), its more frequent reinfections or hard course of illnesses. The causes of it are the new, high virulent strains of Clostridium difficile (NAP1/BI/027), producing toxins A and B. One of the crucial risk factors is the age above 65 years old, contributing to intensified number of deaths. The number of infections caused by Clostridium difficile rises in last years, mainly within elderly, hospitalized persons.

The aim of the study is an evaluation of the frequency of Clostridium difficile occurring among elderly patients.

Retrospective research, leaned against medical documentation analysis of 2914 hospitalized patients in Internal Diseases Ward of Specialistic Hospital No. 1 in Bytom, in years 2014-2016.

The most frequent reason of patient's admissions, in which Clostridium difficile was confirmed, using bacteriological test, was: diarrhoea (53,33%), dehydration (46,67%), weakness (40,00%), vomiting (26,67%) and fever (20,00%). Amid concomitant diseases pronounce hypertension (73,33%) and atherosclerosis (60,00%). Therapeutic process lasted from 11 to 21 days. As a result of Clostridium infection, 2 patients died, which correspond to 13,33% of subjects.

Infection incidence wasn't exceeding 1% in subsequent years, but upward trend is observed. Causes of patient's hospitalizations in elderly were coincident with Clostridium infection, which accompanied chiefly diseases of cardiovascular system. Hospitalization's period came to about 3 weeks.

**Keywords: Clostridium Difficile Infections, infection, geriatric patient, epidemiology**

## **Microclimate in hospital rooms, medical ward chosen hospital from the area of the Silesian province**

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The microclimate of rooms is the important factor associated with the comfort of the work, with welfare of persons staying in them and can also play an important role in the process of therapy of sick people. Microclimate parameters: air temperature, relative humidity, atmospheric pressure, concentration of the carbon dioxide and carbon monoxide, as well as air movement.

Hygienic assessment of the microclimate in rooms of hospital internal ward.

12 rooms of the internal ward in one of Silesian hospitals, which patients stayed in, were provided with surveys. Analysis included areas of rooms and number of patients staying in them. Performed sketches of rooms, which included the arrangement of windows, doors and patients beds. Measurements of microclimate parameters were performed using the gauge IAQ, number HD21AB. It enabled the continuously analysis of air quality, measuring the microclimate parameters.

Hygiene analysis was done through three parameters. An atmospheric pressure and concentration of the carbon monoxide weren't been taken into account, because these parameters kept steady. Average level of the relative humidity in inspected rooms amounted 28,7% and was slightly lower than the standard level, which is 30%. Average air temperature in wards rooms was 23,4 oC and it was housed in the standard in Poland. Medium concentration of the carbon dioxide amounted 1260,5 ppm and was much higher than standard levels which is 500 ppm.

Research showed, that some microclimate parameters in rooms, where sick patients are staying, aren't fulfilling hygienic standards being applicable in our country, what can influence the process of their therapy.

**Keywords: microclimate, hygienic norms, hospital rooms**

## **Dyspnea is connected with depression and sexual activity in Patients with lung diseases. A retrospective study.**

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Dyspnea is one of the most frequently observed symptoms in patients with pulmonary diseases. Patients with shortness of breath often have a concomitant depression. There are also concerns with sexuality among people with breathlessness.

The aim of this study is to examine the relation between depression, breathlessness and sexual functioning.

Individuals were assessed with modified Medical Research Council scale (mMRC) to determine the degree of dyspnea and Beck Depression scale(BDI) to evaluate depressive disorder. Sample was categorized with mMRC: 0-1 and 2-4. A questionnaire including sociodemographic data and information about sexual functions was conducted. Measures of exercise capacity, spirometry and blood gases were also obtained.

The study included 109 patients (56 males and 53 females) with lung diseases. Patients with mMRC: 0-1(n=69) and 2-4(n=40) differ in:6 MWT distance(452±99 vs 347±113.1 [m];p=0.01, respectively), BDI(7,5±6.9 vs 13±8.2, p<0.05,respectively) and assessment of relationship with partner (4.1±1 vs 3.7±3.3 [%], p<0.05, respectively. A correlation between mMRC score and relationship with a partner was observed (r= -0.27, p<0.05). Statistical analysis also reveals positive correlation between mMRC score and BDI score (r=0.4; p<0.05). Patients with more advanced dyspnea did not complain about any kind of discomfort in regards to their sexuality(p=0.7).

Screening for depression may be necessary in patients with lung diseases. Paying attention to patients mental wellbeing can improve quality of lung diseases treatment.

**Keywords: Dyspnea, depression, sexual activity**

## Empathy of medical students - level and determinants analysis

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Empathy is the ability to emotionally perceive the needs and feelings of other people. It is of crucial importance in medical professions where interpersonal contacts play a highly significant role.

It was therefore decided to examine the connection between the level of the sense of empathic sensitivity and the motives for choosing a field of studies among medical students.

452 students of physiotherapy, nursing, midwifery and medicine were examined: 393 women aged  $22,1 \pm 1,9$  years and 59 men aged  $22,7 \pm 1,9$  years. The following psychometric techniques were used: a survey consisting of a statistical part (gender, age, subject of studies, year of studies and degree) and the Interpersonal Reactivity Index (IRI)

A higher level of empathy and a greater variation due to variables of empathic sensitivity were identified in women. A negative correlation between the age and the scale of perspective-taking was observed in men. Moreover, no differences were found in the level of empathic sensitivity as regards a chosen field of studies. The highest level of empathic concern was identified in persons whose motivation to undertake studies was to gain recognition in the eyes of others.

Women display a higher level of empathy than men, simultaneously with a great variation in the selected components of the empathic sensitivity scale. The level of empathic sensitivity is not a factor that differentiates a chosen field of studies and the motivation behind the choice of studies. The students for whom the main motive for their choice of studies was their own image show the highest capacity for sympathy and compassion towards other people.

**Keywords: empathy, motives of study, medical students**

## **Awareness and usage of bee pollen in Polish society.**

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Polish society tend to consume more and more healthy, organic food with products that not only make one not hungry but also are source of all essential nutrients. Bee pollen – one of less known bee products - is one of such nutrients-rich organic foods. Properties of bee pollen were subject to numerous scientific research projects. Among others bee pollen may act as anti-bacterial, anti-viral, anti-fungal, hepatoprotective, anti-oxidant and anticancer agent. It is widely used among bee keepers.

The aim of the study was assessment of awareness and usage of bee pollen in Polish society.

A self-prepared online questionnaire was presented to Facebook users of various ages – school and universities students as well as workers. As a results 518 forms were gathered. Women consisted 69.6% (n=360) of respondents.

47.4% (n=245) of respondents encountered bee pollen in shops, 82.4% (n=426) were aware that bee pollen is one of bee products. 24% (n=124) of respondents declared usage of bee pollen (current or past). The aim of bee pollen consumption were in most cases improvement of concentration and gastrointestinal tract work as well as increase in general body performance. 87.9% (n=109) of bee pollen consumers recommended bee pollen to their friends.

The bee pollen is not very popular in Polish society. Despite that fact users of bee pollen may probably posses some knowledge on its health influence as it was used for well identifiable purposes.

**Keywords: Bee pollen, Polish society, questionnaire**

## **E-smoking among polish students - frequency, pattern and motivations**

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The electronic nicotine delivery system called an "e-cigarette" has become widely popular, especially among young people.

The aim of the study was to assess the prevalence of cigarette and e-cigarette smoking among students in Poland as well as analysis patterns of smoking and e-smoking.

A population based survey was performed, in a group of 2900 students from three Universities in Katowice, Poland. The questionnaire, created for the purpose of the study, included questions on cigarette and e-cigarette smoking habits.

Completed questionnaires were obtained from 2242 students aged  $21.5 \pm 2.2$  y-rs: 1328 medical (M) and 914 non-medical (N-M) with the response rate 77.3%. Ever e-cigarette use declared 47.7% of respondents (41.6% M, 56.7% N-M; ptional cigarette. Non-medical students compared to medical students reach for both types of cigarettes more often.

**Keywords: electronic cigarette, smoking, tobacco, students**

## **Socioeconomic factors determining nutritional behaviours among pregnant women in Silesia.**

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The health behaviour of pregnant women, including proper consumption of adequate amount of nutrients, fluids, vitamins and minerals are essential for the health of the mother and child.

The aim of this study was to assess nutritional behaviours of pregnant women depending on financial situation.

A population based survey was performed on a group of 450 pregnant women in Silesian Voivodship. The questionnaire, created for the purpose of the study, included questions about pregnant women feeding habits.

Fully completed questionnaires were received from 327 pregnant women (72.6%), mean age  $30 \pm 5.6$  yrs. Daily intake of fresh fruits and vegetables declared 94% of asked women. Fresh or manufactured fruits were less often chose by women with unsatisfactory financial status (68.4%), compared to those with moderate financial situation (92%) or those with satisfactory income (84%;  $p=0.01$ ). Women with unsatisfactory financial status consumed fast-food more often (10%) than women with moderate (0.6%) or satisfactory financial situation (1.4%;  $p=0.001$ ). Pregnant in a worse financial selected frozen products more often (13.3%) than future mothers with moderate (4%) or satisfactory (2%;  $p=0.001$ ) financial status. Mothers with university degree, compared to those worse educated, during pregnancy less often used alcohol (10% vs. 30%;  $p=0.0001$ ) and cigarettes (8.5% vs. 27.5%;  $p=0.0001$ ).

Socioeconomic factors has a significant influence on the eating habits during pregnancy. Worse financial status of pregnant women affects negatively on proper diet balance and on its qualitative and quantitative shortages.

**Keywords: pregnancy, diet, nourishment**

## **E-cigarette: effective tool to quit smoking or an additional source of nicotine?**

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Available evidence regarding the relationship between e-cigarette usage as a tool in smoking cessation are inconsistent.

We sought to evaluate the effectiveness of e-cigarette use as a tool to quit or reduce smoking

A population based survey was performed, in a group of 2900 students from three Universities in Katowice. Self-prepared questionnaire, included questions on e-cigarette smoking habits.

Completed questionnaires were obtained from 2242 students (response rate 77.3%; mean age= 21.5±2.2 y-rs) of which 68.2% were female (F) and 31.7% were male (M). E-smoking was declared by 3.6% of respondents (F:2.9%, M:5.2%; p=0.007), wherein 1.3% of respondents smoked e-cigarettes only (F:1.1%; M:1.7%; p=0.9) and 2.4% of subjects were dual smokers (F:1.8%; M:3.5%; p=0.004). Almost one-third (35.6%) of e-smokers used e-cigarettes as an aid to quit smoking. Only 11.3% of e-smokers declared, that e-cigarette helped them to quit traditional cigarette smoking. Since starting e-smoking, a reduction in cigarette consumption (mean 6.2±4.8 cig./daily) was observed by 53% of dual smokers. Among e-smokers, 47.8% reported an addiction to e-cigarettes, and 15.5% tried to give up e-smoking. Only 5.6% e-smokes used e-cigarettes without nicotine. Since they started e-smoking, constant concentration of nicotine in e-liquid was indicated by 64.8% of e-smokers, 8.4% increased (mean 11.6±5.7 mg/ml) and 26.8% reduced (mean 8.8±3.5 mg/ml) nicotine content in usually used e-liquid.

Smoking cessation was not the reason for e-cigarette use among most of e-smokers. E-smokers did not use low nicotine doses or try to reduce their nicotine content.

**Keywords: e-cigarette, tobacco, nicotine, smoking cessation**



## Contemporary perception of medical staff by Polish patients

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At present, the public's awareness of the patient's rights increases, and as a result of the common availability Internet, it also facilitates access to broad medical knowledge, thereby it is changing a position of medical staff in Poles minds.

The aim of the study was to find out how patients see medical staff. Material and methods In the study took part 232 people of all ages living in all voivodships in Poland. An original questionnaire survey was used for people currently living in Poland who had or have to do with health care. Questions concerned patients' experience in contact with medical staff: doctor, nurse and midwife. The respondents were informed about volunteering, anonymity of participation in the research, and using results only for scientific purposes.

The most respondents declared that they had overall positive or neutral attitude to doctors (72,4%), nurses (89,2%) and midwives (80,87%), while the respondents acknowledged that Doctor (42,7%), nurse (25,0%) or midwife (6,0%). The most frequently described annoying situations by the patients concerned a reluctance to answer the questions asked by the patient regarding his or her state of health, explanation, not listening a patient, treatment as an object. Nurses and midwives were accused of disrespectful and nonchalant behavior to patients, lack of interest and aversion when the patient needed help in some activities, lack of gentleness and disparagement to patients.

Conclusions In the patients' opinion, medical staff should to show greater empathy, understanding and respect for the patient. Communication between medical staff - patient needs improvement.

**Keywords: medical staff, doctor, nurse, midwife, patient**

## **Impact of change in nutritional status and composition of body on blood pressure during medical studies.**

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During studies students tend to change their lifestyle which includes: irregular nutrition, increased consumption of highly processed food and decreased physical activity. These changes affect the energy balance.

The aim of the research was to evaluate how nutritional status and body composition affects blood pressure among the first and the fifth year medical students.

Study enrolled 65 students of Medical University of Silesia in Katowice (35 students of the first and 30 of the fifth year). Composition of body by using bioimpedance method (Bodystat) and blood pressure were assessed.

Students of the fifth year had higher body mass by average on 1.5 kg than the students of the first year. Also the BMI was higher (0.4 kg/m<sup>2</sup> more than average for the first year students) and fat content was higher by 2%. Also the waist and hips circumferences were increased during the five years of studies (from 74.9 to 77.4 cm and from 84.3 to 87.4 cm, respectively). Despite the increased anthropometric parameters, the average systolic blood pressure (121.3 mmHg on the first year and 113.5 mmHg on the fifth) and diastolic pressure (74.8 mmHg on the first year and 73.1 mmHg on the fifth) decreased. In both groups the higher BMI, waist and hips circumferences were proportional to blood pressure values.

Despite increase in fat depot, the values of blood pressure are decreasing during the period of studies. Therefore other factors (perhaps stress) are responsible for the higher blood pressure among the students of the first year of medical studies.

**Keywords: Body Mass Index, blood pressure, medical studies, bodystat**

## Evaluation of the drug resistance of *Acinetobacter baumannii* strains isolated from hospitalized patients.

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*A. baumannii* is a Gram-negative rod that found in the water and soil. Small nutritional requirements and high adaptability have made these bacteria widespread also in the hospital environment. The bacteria cause particularly dangerous infections among patients hospitalized in intensive care units. A serious problem is the expansion of multi-drug resistant strains (MDR).

The aim of the study was to evaluate the drug resistance of MDR *A. baumannii* strains isolated from hospitalized patients.

4640 microbiological studies of patients hospitalized in the 2015 and 2016 were analyzed. For each case, species identification and Muller-Hinton discolouration was determined in accordance with EUCAST recommendations.

73 *A. baumannii* strains (1.57%) have been identified over the past two years. All strains were completely resistant to ampicillin/sulbactam, cefepime, ticarcillin and levofloxacin. In the 2015 the resistance of the strains to antibiotics was: amikacin (85.71%), colistin (9.09%), gentamicin (78.57%), imipenem (66.67%), meropenem (70.59%) and tobramycin (68.75%), respectively. In contrast, in 2016 resistance was as follows: amikacin (96.97%), colistin (10.00%), gentamicin (96.97%), imipenem (93.75%), meropenem (93.94%) and tobramycin (72.73%).

Analyzed *A. baumannii* strains demonstrated increased resistance to aminoglycosides and carbapenems. In addition, the all of strains showed complete resistance to penicillins, cephalosporins, fluoroquinolones and sulfonamides. The slight increase in polymyxin resistance was also observed.

**Keywords:** *Acinetobacter baumannii* drug resistance antibiotics

## **The study of mercury release from dental amalgam fillings.**

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Dental amalgams are an alloy of mercury with other metals. Hg content in this composition is about 50%. Continuous use the amalgam as a dental fillings is related to their strength, ease of processing and relatively low cost. Studies have shown the possibility of release mercury from amalgam fillings, which may contribute to the exposure to Hg.

The aim of this study was to investigate whether dental amalgams release mercury to the solution of artificial saliva.

Five dental amalgams prepared by mixing immediately before the study and 7 amalgam fillings removed from the teeth were used during the examination. Amalgam fillings were placed in a solution of artificial saliva at room temperature. Samples of artificial saliva in the various period of time were taken for the study. The concentration of Hg was measured in the samples by the mercury analyzer AMA 254.

The study results showed that the concentration of Hg in the samples of the artificial saliva ranged from 0.027 to 1.133 ppm, average 0.114 ppm. The Hg concentration in samples of artificial saliva was changed due to the time of the study.

Hg concentration was found in all tested saliva samples, indicates that the amalgam fillings release this element. It was found that this process is not depended of the type of amalgam fillings (mixed before the study or removed from the teeth).

## **Evaluation of the effect of excreted sodium and potassium concentrations in the morning urine sample among students of 1st and 5th year of the Faculty of Medicine in Katowice on blood pressure values.**

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Increased sodium intake is associated with increased prevalence of hypertension and increased cardiovascular risk. Potassium consumption is protective. The most reliable indicator of sodium and potassium intake is the evaluation of its and excretion.

The aim of the study was to evaluate the excreted sodium and potassium concentrations in morning urine samples and blood pressure (BP) values of the investigated group.

The study involves 66 students: 1st year (N = 36, mean age 19.8yr and 5th year (N = 30, mean age 24.3yr), sodium, potassium and creatinine concentrations were measured in morning urine specimens with blood pressure measurements.

The mean of sodium /creatinine ratio (mmol/g) among women of 1st and 5th was 85 and 126 respectively (48% increase), while among men: 78 and 102 (31% increase). Instead, the mean value of the potassium /creatinine ratio among the women of research group was 47 and 73 respectively (increase of 70%) and 38 and 46 respectively (21% increase). The mean systolic /diastolic blood pressure values for females are 117mmHg / 75.5mmHg and 105.6mmHg / 68.8mmHg, respectively, among males: 128.4mmHg / 74.9mmHg and 137mmHg / 86 mmHg.

Sodium intake of students increase in spite of acquiring medical knowledge. Increased intake of sodium than potassium in men is associated with an increase of their blood pressure.

**Keywords: blood pressure, cardiovascular risk, sodium excretion**

## Individual attitude towards euthanasia of Polish university students

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Dying patients confront complex and unique challenges that threaten their physical, emotional, and spiritual integrity. Many of them die prolonged and painful deaths, receiving unwanted, expensive, and invasive care. Some patients have several disabilities that requires constant care. Regarding that euthanasia comes as an option for the patients in terminal state.

The aim of the study was to assess and compare perception of euthanasia in the groups based on gender, type of faculty and belief of students from Polish universities.

In the study took part 6838 students (78,21 women and 21,79% men) in the age of 19 to 35. They were divided into medical (11,05%) and non-medical (88,05%) brand. They were asked to fill the original survey which consisted of questions about demographic and religion data and their attitude towards euthanasia.

The acceptance of euthanasia in the terminal state of neoplasm is higher in the group of women (74,03% vs 67,72% of men,  $p < 0,000$ ), non-medical students (73,16% vs.68,91% of medical,  $p < 0,000$ ), non-believers (93,07% vs.57,21% of believers,  $p < 0,000$ ). In the situation of total paralysis acceptance is also higher in the group of women (52,66% vs. 50,87% of men,  $p < 0,000$ ), non-medical students (52,90% vs. 47,61% of medical,  $p < 0,000$ ), non-believers (74,06% vs. 35,78% of believers,  $p < 0,000$ ). The same pattern is observed in the case of personal situation of terminal state of neoplasm 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:** euthanasia, palliative care

## **Dietary supplements are beneficial to health? Contamination of supplements by heavy metals.**

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The market of dietary supplements is developing very dynamically, especially in Poland. The herbal diet supplements are used mainly by women in order to maintain a healthy weight. Herbs and other plants, accumulate heavy metals because of soils contamination, on which they are cultivated. The use of contaminated supplements can be potential source of human exposure to harmful heavy metals.

The aim of the study was to investigate the heavy metals content in selected "slimming" herbal diet supplements, available on the Polish market.

The content of heavy metals in the samples of different herbal diet supplements and in a sample of tap water were conducted using atomic emission spectrometry with an inductively coupled plasma (ICP OES).

The hypothesis put at the beginning of the study assumed that some of the herbal diet supplements may contain elevated concentrations of heavy metals and could be potential health risk factors. Currently, the research are still continued, therefore the verification of assumed hypothesis will be made after analyze of all the samples.

**Keywords: herbal diet supplements, heavy metals, exposure**

INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF PUBLIC HEALTH AND HEALTHCARE II**



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## Physical abuse in Maltreatment Child Syndrome

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Maltreatment Child Syndrome (MCS) still remains a major gravity problem. It can occur as physical and sexual abuse, neglecting or inappropriate care over the child. Maltreatment Child Syndrome data presentation based on one hospital's example. Cases of children suspected with MCS between January 2009 – July 2016 in Provincial Specialistic Childrens' Hospital were taken as a material. Retrospective analysis was used as a method, paying special attention to physically abused patients. There were 247 patients noted with suspicion of MCS in analysed period of time. 61% were male patients and 39% female patients. In 54 cases (22%) physical abuse was presented as sexual abuse, burns, intentional trauma, skin injuries and Shaken-Baby-Syndrome. Sexual abuse was suspected in 11 cases – 10 female patients and 1 male patient. 3 children refused to point a violator, rest pointed a father, stepfather, brother, boyfriend, or unknown person. 30 children were diagnosed with intentional trauma. 20 patients presented head trauma, 9 back/stomach trauma, 6 limbs trauma consisting old and new broken bones. Intentional burns were noticed in 2 cases. 6 patients were admitted to the hospital due to skin injuries. In 4 cases Shaken-Baby-Syndrome was suspected. More than one kind of physical abuse was found in 43%. Intentional trauma was suspected in cases where childrens' injuries were inadequate to mechanism described by parents'. Male patients are bigger group who experienced physical abuse. The most common kind of physical abuse are results of trauma - 67% are head traumas. Female patients more common experience sexual abuse. Full physical and imaging examination should be performed when suspecting a MCS.

**Keywords: Pediatric Surgery Maltreatment Child Syndrome Physical Abuse**

## **Social aspects of Tuberculosis - awareness of infection and complications among young people**

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Tuberculosis (TB) is an infectious disease caused by *Mycobacterium tuberculosis*, which is most often associated with a lung pathogen, however, it may affect each part of the body. TB which spreads through the air, if active, manifests by classic symptoms such chronic cough with blood-containing sputum, fever, night sweats, and weight loss. In spite of the fact that number of afflicted by TB has recently decreased, unfortunately it is still present among specific populace, potentially fatal and leads to irreversible damage of lung and other organs.

The aim of this work was to assess the level of awareness concerning TB among students of Faculty of Technical Science in Lublin and The Faculty of Humanities.

The research group consisted of 100 people , 50% of them were studying at the Faculty of Technical Science in Lublin, another 50% were studying The Faculty of Humanities. There were 68 women and 32 men. They were send an anonymous survey via internet.

Only 46% asked about TB's etiological factor answered bacteria. 50% of the group didn't know if they were vaccinated against TB. 35% answered that TB is not fatal disease. 88% admitted that the level of education concerning TB is very poor. 76% were interested in the topic and prone to improve their knowledge about TB.

The survey revealed inefficient awareness concerning TB. Furthermore, young people seem to be conscious that it is essential to know how to avoid TB infection and life-threatening consequences.

**Keywords: Tuberculosis, level of awareness concerning TB**

## **Survey about the awareness of the designer drugs among junior high school students**

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Designer drugs are products of a diverse composition that contain psychoactive substances that act on the human nervous system in a similar way to previously known drugs.

Due to the great danger of using the designer drugs, we have developed a study aimed at acquiring information about the knowledge of junior high school students about the designer drugs and their impact on health.

The survey was conducted by using anonymous questionnaires, which included 17 extensive questions and metrics with respondents. The study involved 356 pupils aged 12 to 16 years old attending three junior high schools in rural areas located in the Lubliniec district in the Silesian province.

About the designer drugs, the young people first heard on television, but about 40% of the respondents have no idea what they are. More than half of respondents are aware that the designer drugs are dangerous to their health and life and therefore declared that they are their opponents, and 71% said they should be banned. 23% of people declare that they saw people in the circle of friends under the influence of the designer drugs or were themselves influenced (4%). It is puzzling that young people do not really talk about the designer drugs, and if this topic was raised, it is most often taught by a teacher (29%) or parents (26%).

Students of junior high schools in the study knew that the designer drugs are just as dangerous as the drugs, but they do not have sufficient knowledge of the subject, and the information on the designer drugs is still not widely available. Teachers and parents play a major role in educating young people about what designer drugs are and what dangers it entails.

## **Evaluation of collaboration between dentists and doctors of other medical specialties.**

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The collaboration between dentists and doctors is crucial to provide therapeutic and preventive patient care. Doctors and dentists are organizationally separated implying that collaboration can only occur informally and on a voluntary basis.

Evaluation of collaboration between dentists and doctors of other medical specialties and their expectations towards the cooperation.

Analysis was performed on 96 doctors of different medical specialties, divided into groups of surgical and non-surgical, and 75 dentists. The main groups were separated into sections depending on their work experience: A - 0-10 years, B - 11-20 years and C - over 20 years. Original interview, including 8 questions, was used in the research.

The whole group of dentists finds the interprofessional cooperation vital. Their patients are consulted mainly with cardiologists (16%) and pediatricians (15,2%). 60% of dentists, mostly from section A and C, consider their collaboration with doctors rather poor. All dentists say they are being asked for consultation, mainly to prepare for ophthalmic surgery (28%). Whole group agrees that the cooperation should be strengthened. In a group of doctors, non-surgical specialties were represented by 59 specialists and surgical by 36 specialists. 56% of the surgical specialists claim that the collaboration works well, however 58% of non-surgical specialists allege that it requires an improvement.

Interprofessional collaboration between dentists and doctors plays a major role in comprehensive health care, so it requires a greater effort to be put on. Communication system should be improved to provide faster diagnosis and more accurate treatment.

**Keywords: Comprehensive health care; different medical specialties; dentistry; interdisciplinary communication.**

## **Frequency of symptoms of chronic fatigue syndrome among teachers in Dąbrowa Górnica**

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Chronic fatigue syndrome has a negative impact on health, life satisfaction and job productivity. CFS reduces or completely makes impossible ability to perform activities of daily living.

The aim of this study was to estimate the prevalence of recommended symptoms of chronic fatigue syndrome (CFS) in the population of school teachers - primary and secondary schools in Dąbrowa Górnica.

The study was conducted by using an original questionnaire based on diagnostic criteria for chronic fatigue syndrome proposed by Fukuda. This survey was conducted among teachers of 11 schools. It was analyzed 225 properly filled questionnaires (188 females and 37 males).

The mean age of females was 44.9 +/- 8.4 years and 41.7 years +/- 8.7 years in males. Average work experience was 19.4 years +/- 9.3 years for women and 16.5 years +/- 9 years for males. In the study population identified 19 teachers who meet the required criteria (CFS).

CFS according to the Fukuda criteria is present in 8.4% of this population (in the general population - 0.1-3.0%), what suggest the need for future research in this and other occupational groups.

**Keywords: chronic fatigue syndrome, teachers, occupational health**

## **Leptin receptor gene polymorphism in relation to overweight and obesity among population of Upper Silesian Agglomeration.**

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Overweight and obesity have become a public health problems. They are associated with leptin and leptin receptor (LEPR). A number of studies have evaluated many of LEPR polymorphisms.

Examining if any association between LEPR K109R polymorphism (rs1137100) with overweight and obesity in population of Upper Silesia Agglomeration can be found.

The study included a group of 510 patients inhabiting Upper Silesian Agglomeration (divided into groups of healthy, overweight and obese patients). Polymorphism of LEPR gene was examined by the use of Applied Biosystems 7300 Real-Time PCR System. The analysis was carried out with fluorescent-labeled probes by means of ready-to-use assay kits for single nucleotide polymorphism detection.

The distribution of LEPR K109R genotypes and alleles showed no significant differences between the healthy, overweight and obesity group ( $P > 0.05$ ). The prevalence of A allele was 76,73% and G allele was 23,27%. There was no substantial association between different rs1137100 genotypes and prevalence of metabolic disorders.

Our results suggest that LEPR K109R (rs1805134) polymorphism could not be involved in the development of overweight and obesity. As these metabolic disorders are essential problems for public health nowadays, this issue should not be underestimated. More studies are necessary to confirm or reject the relationship between other polymorphisms of LEPR gene in Polish population.

**Keywords: Leptin, Leptin Receptor Gene Polymorphism, Overweight, Obesity, Metabolism**

## **Hyperbaric oxygen therapy effectiveness in wound care and radiation induced injuries**

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Work's tutor: Dr Ewa Sawickas

Hyperbaric oxygen therapy (HBOT) is a medical treatment that involves breathing of pure oxygen at pressure greater than atmospheric (1,5 - 3 atmospheres). Treatment takes a place in special monoplace or multiplace chambers. The duration of treatment is usually 1,5 hour per day and patients may receive up to 60 sessions. In result we observe increased oxygen saturation of blood and tissues caused by enhanced transport by hemoglobin and improved dissolution of oxygen in blood plasma. Some indications for hyperbaric oxygen are problem wounds, especially diabetic foot infections, radiation induced injuries, non-healing chronic wounds.

The aim of study was to evaluate the effect of hyperbaric oxygen therapy on the level of carbon monoxide in exhaled air in patients with diabetic foot infections, radiation induced injuries, non-healing chronic wounds.

Patients were examined before and after hyperbaric oxygen therapy by measuring the carbon monoxide level in exhaled air. A special MicroCO device was used to gather the data. Results were correlated with information obtained from anonymous survey about factors that may affect the concentration of CO.

The level of carboxyhemoglobin after HBOT therapy decreased significantly in all patients.

Research has shown the great therapeutic value of hyperbaric oxygen therapy in patients with diabetic foot infections, radiation induced injuries, non-healing chronic wounds. Even though efficacy of hyperbaric oxygen therapy is difficult to assess, the results of its use in problem wounds care leave a hopeful perspective for future use.

**Keywords: Hyperbaric oxygen therapy, HBOT, Diabetic foot, Wound healing, Chronic wounds, Skin infection**



## The effect of genetic factors on the occurrence of refractive errors

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The aim of this study was to investigate if there is an influence of genetic factors on the refractive errors.

A total of 243 Polish students (38 men and 205 women in age 18-30 years) were examined. A questionnaire considered: type of refractive error, high of refractive error, a moment when it was diagnosed for the first time. Moreover, respondents answered the questions about their parents' refractive errors. The obtained results were typed into an Excel spreadsheet and analysed statistically using Statistica 12 software. Data analysis was performed using the Kruskal-Wallis test, U Mann-Whitney test and chi-squared test, P values of  $<0,05$  were considered statistically significant.

Odds ratio for refractive error for children when both parents have refractive errors is 2,05 ( $p < 0,05$ ). The impact of occurrence mother's refractive error on child's refractive error was observed ( $OR=2,29$ ,  $p < 0,05$ ). The impact of occurrence father's refractive error was not observed ( $p > 0,05$ ). Among the respondents who were diagnosed with refractive error in early childhood hyperopia is more frequent, whereas among the respondents who were diagnosed with refractive error in their adolescence myopia is more frequent.

The occurrence of child's refractive error is more likely when both parents have refractive errors. Mother's refractive error predispose to child's refractive error and increase the risk of child's refractive error over 2 times. With increasing age, there is a change of refractive error from hyperopia to myopia.

## **Knowledge and attitude of parents to protective vaccination**

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The vaccines and the common immunisation programme are one of the biggest human achievement. The anti-vaccination movements are becoming increasingly stronger and their effects are becoming more tragic. Many parents haven't got reliable knowledge - in consequence, they are opting out and they don't vaccinate children. To solve this problem, we should find the origin of parents fears.

We want to find out what parents know about vaccines and about anti-vaccination movements and what they think about it.

A survey was conducted among 233 parents. The research tool was the author's questionnaire (voluntary and anonymous) with 24 questions. The interview concerned questions about opinion and knowledge about vaccinations.

Almost 90% of parents are in favor of vaccination, but not all - 1/3 of the respondents said that not all vaccinations are necessary. 78% have seen advertisements concerning children's immunisation. 62% respondents have heard about anti-vaccination movement. Interestingly, 82% respondents take the pediatrician as a source of information and what is statistically significant 33% of them considered that their knowledge isn't sufficient, but 74% of them want to gain knowledge. 64% are aware that non-vaccinated person can cause life-threatening situation for population. There is little parents awareness about the post-vaccination complications and situations in which vaccination may be postponed or contraindicated.

The knowledge of parents about vaccination is unsatisfactory. It is necessary to carry out information campaigns and to develop reliable information about vaccines for parents.

**Keywords: vaccinations, anti-vaccination movements, immunization**

## **Dangers result from working on a computer during researches.**

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In spare time helps us an ubiquitous invention-the computer, which is the source of many problems-usually caused by inappropriate working conditions. Could our negligence lead to health consequences or cyberspace dangers? Does the problem concern the mental elite of our University?

The insight into behavior of Medical University of Silesia's Professors, when they work on a computer during researches or in daily life. The assessment referred to computer's working conditions and evaluated the influence of deviation from the norm on tutors' health.

The questionnaire was taken in a group of 77 Professors of SUM—members of Faculty Council (Katowice, Zabrze). Among respondents 36,36% make up females, 63,74%—males. The questionnaire was anonymous and voluntary.

Only 38,96% of respondents follow the ergonomic rules and most of them represent women. There is a connection between wrong distance from the monitor to the eyes and visual disturbance. Disuse of glasses with anti-reflective coating endanger vision defects. During researches 81,81% of professors use the internet. Among women 47,06% screen the webcam. Among men the percentage is lower and stand at 23,08%. From examined 49,35% scan files using antivirus software.

Incorrect computer using by professors of SUM shows that level of ergonomic knowledge is relatively low. It entails detrimental health consequences, which had been noticed by respondents. They primarily include subjective feeling of eyesight deterioration. The cognizance about security in cyberspace is good enough, but this knowledge doesn't translate into prevention. The lack of awareness of working with a computer (not practicing) is identifiable social problem.

**Keywords: computer, ergonomics, working conditions, health consequences, security in cyberspace, research, professor**

## **Comprehensive supply needs of patients with functional disorders of the masticatory**

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Symptoms of the masticatory system are often a source of stress and increasing anxiety in patients.

The aim of the study was to determine the needs in the treatment of patients with functional disorders of the motor system of chewing.

Studies have been conducted among patients suffering from dysfunction of the chewing organ. Used diagnostic tool was interview questionnaire.

Reported symptoms were headaches and migraines - 26%, the symptoms sound in the pond - 16%, neck pain and difficulty in opening and closing paragraphs - 17%.

Comprehensive, holistic diagnostic-therapeutic approach is a prerequisite for effective treatment.

**Keywords: temporomandibular joint, dysfunction of stomatognathic system**

## Doctor's motivation in terms of selected sociological-economic factors

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Marek Kucharzewski

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Comprehensive, holistic diagnostic-therapeutic approach is a prerequisite for effective treatment.

**Keywords: professional motivation, sociological and economic factors**

## **A birth of a child from the perspective of the father.**

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After announcement the most famous equation – theory of relativity Albert Einstein wrote touching letter to his daughter, wherein he described a powerful and unlimited force, which scientists aren't able to explain until now. This force was love.

The aim of the study was to present men's knowledge about care for the child, possibility of participation in a school of childbirth, sexual intercourse with pregnant woman, family labour.

In a study took part 200 men. Fathers filled a questionnaire, which consists of 45 questions, which concern family labour, sexual intercourse with pregnant woman, school of childbirth, care of the child. The average age was 32,8.

Results of study show that, the biggest fear of fathers were baby hygienic procedures (e.g. nail clipping) 32,5% of men granted this answer. 34,5% of respondents took part in a school of childbirth. 12,5% of men said, that classes in a school of childbirth totally prepared him to care of the child. 25,5% of respondents intercoursed with pregnant woman several times in a week. 43,5% of men granted correct answer the question about if sexual intercourse during pregnancy is indicated. According to 39,5% respondents quality of sex during pregnancy didn't change. Only 5% of respondents indicated a correct answer the question about definition of family labour.

Less than half of men took part in school of childbirth. A little group of them said, that it was prepared to care of the child. Less than half of men granted correct answer about indications to sexual intercourse during pregnancy and answered that, quality of sex during pregnancy didn't change.

**Keywords: Care for the child, school of childbirth, sexual intercourse, family labour**

## **Tattooed healthcare professionals – opinion of outpatient clinic patients in the Katowice city**

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Since the beginning of human life, people made a tattoos. In the antiqua age tattooed body meant beauty, independence and membership to social classes. In ancient Greece and Rome only men were privileged to have them. Nowadays, “being different” is on top. Our every step and activity lead to existence amongst the society. In spite of increase lever of tolerance in the modern world, tattoos still have negative meaning. They are associated with pathological or crime environment also with cultural rebellion.

The aim of the study was to recognize public opinion about tattoos among the medical stuff and analyze the correlation between level of education, age and opinion about medical stuff with tattoos.

120 adults took part in research: 74 women (33,8% at the age of 46 – 60 years old) and 46 men(37% at the age of over 66 years old). Method used for the research was the anonymous questionnaire.

The study shows that the majority of respondents think that having a tattoos don't affect to the quality(95%) and competence of work (90,8%). Most of the respondents declared that they don't refuse the medical examination by tattooed healthcare professional – 94,2%.73,3% of respondents think that medical stuff don't have prohibition of do tattoos on their body. 50,8% of respondents declared that the tattoos should be hidden during work.

Although the tattoos are made in clean, safe and modern tattoos studio, some people are afraid of infection from medical stuff who have tattooed body. There is relationship between ages of respondents and their opinion about total ban of tattooing body among healthcare professional.

**Keywords: tattoo, healthcare, public opinion**

## Motive for starting to study Nursing and it's students' public image

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The image of nurse depends on many factors, which is created by beliefs, opinions and stereotypes. The perception of nurses is also determined by appearance, professional, personal and interpersonal characteristics. Nonetheless important are personal experiences of patients in direct contact with a nurse. Nursing is a public trust profession, it has an enormous prestige which was built by previous generations of nurses, so the motive of choosing this direction also has a great impact of future professional image. This study is an attempt to analyze main motivations to study nursing and assesment the image of nurse in the eyes of students. In the study 101 nursing students of Medical Univeristy of Silesia in Katowice were involved. The group age range was 20-28 years old. Study was performed using an authorial questionnaire and by diagnostic pool method. The respondents indicated as the reason for choice of studies: calling – 44 (44%), guaranteed work – 29 (29%) and lack of due – 16 (16%). According to study group, nurse should be emphatic – 77 (76%), friendly 54 (53%) and open – 42 (42%). At work nurse should follow attributes like: sensitivity and empathy – 12 (12%), scientific knowledge - 5 (5%), sensitivity, empathy and gained knowledge – 84 (84%). The respondents had determined preffesional prestige as: low – 39 (39%), average – 55 (54%), high – 7 (7%). The main reason why students choose this direction was a vocation. Some of them choose it because of the the acquisition of knowledge. According to respondents nursing has an average prestige.

**Keywords:** professional image, nurses



## Motive for starting to study Midwifery and it's students' public image

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Midwife, as well as nurse, contacts patients most frequently. Due to this fact, the image of midwife is important and there are many factors that influence it. Motive for starting to study is also vital, because it results in professionalism level and midwives' public image. The aim of the survey conducted among Midwifery students was to define main motives for starting to study this course and characterize Midwifery students' public image of the profession. There were 115 students of the III and IV course surveyed, all of whom are the students of the school of Health Sciences in Katowice. Researched were 20-26 years old. Survey was based on own research questionnaire and diagnostic pool method. The results showed, that the motives for starting Midwifery are: vocation – 57 students (50%), successful recruitment to medicine – 31 students (27%) and “no reason” was indicated by 20 students (17%). There were 87 students (76%) who had already looked after children or pregnant women before starting to study. 107 surveyed (94%) pointed out, that general appearance is important aspect of midwives' professionalism. According to the students researched, in the professional life midwives should follow: sensitivity, empathy and professional knowledge – 91 students (79%), sensitivity and empathy – 14 students (12%) and professional knowledge – 10 students (9%). Surveyed students stated midwives' profession prestige as medium – 71 students (63%), low – 34 students (30%) and high – 9 students (7%). Half of the students chose Midwifery considering vocation motive. Only a very small percentage considers general appearance unimportant. Students consider midwifery prestige as low or medium.

**Keywords:** midwife profession, general appearance

## **Knowledge concerning diabetes among students of the final year of medicine at the Medical University of Silesia**

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To evaluate knowledge concerning diabetes among medical students of the Medical University of Silesia (SUM) in Katowice.

341 (67,53%) students of the last year of both Medical Schools of SUM 165 (48.4%) from Zabrze, 176 (51.6%) from Katowice answered anonymously a 25-question survey. Questions concerned basic knowledge on diabetes, which was in 2006 affirmed by WHO as major global health treat.

Among participants 66.9% were women and 33.1% - men. 323 (94.7%) attended diabetology classes. 21 (6.2%) plan to specialize in diabetology. 323 (62.5%) described themselves as prepared to some extent to take care of patients with diabetes. Surprisingly not all students (327; 95.9%) know that diabetes type 1 (T1DM) is incurable and just 281 (79.8%) claimed that patients with T1DM always need insulin. 224 (65,69%) students presented basic knowledge concerning MODY diabetes. Two questions regarding treatment of type 2 diabetes were answered correctly by 271 (79.5%) and 299 (87.7%) students. Hyperglycemia symptoms and causes were familiar to only 233 (68.3%) and 232 (68.0%) students respectively. Hypoglycemia treatment was indicated correctly by 325 (95.3%) students, however just 139 (40.8%) knew at what blood glucose level to diagnose it. Treatment of diabetic ketoacidosis was familiar to 262 (76.8%) students. Questions concerning insulin pump therapy were answered correctly by 236 (69.2%) and 276 (80.9%) respondents.

The results demonstrate that knowledge concerning diabetes among medical students of SUM needs to be improved as well as reveals the importance of evaluation of the educational program.

**Keywords: knowledge; diabetes; questionnaire**

## **Patient information leaflets attached to drugs - a helping hand or a challenge for the patient?**

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Patient information leaflets, attached to drugs, contain information about the composition of a given preparation and the effects of the active substances, as well as describe indications and contraindications for use and possible adverse reactions associated with taking the drug.

Assessment of the understanding degree of the leaflets' contents in which the active agent is ibuprofen, a popular representative of nonsteroidal anti-inflammatory drugs (NSAIDs).

The total number of 405 people completed the survey questionnaire, 314 women and 91 men. 14% of them were at the age of 15-20, 67% aged 20-40 years old, 13% at 40-60 and 6% older than 60.

The results show that 63% of the respondents are conscious of the main adverse reactions of ibuprofen. 34% of the people, who admitted reading the enclosed package leaflet, pointed out the incorrect main adverse reactions of ibuprofen. 58% of the respondents do not know that ibuprofen should not be taken together with Polocard- a popular, often-used drug also from the group of nonsteroidal anti-inflammatory drugs.

The results of the conducted surveys shows, that complicated medical vocabulary, present in patient information leaflets, could be problematic for patients in understanding the leaflets' contents. The need of pharmaceutical care in the contact with patients has been proven.

**Keywords: Patient information leaflet, patient, ibuprofen**

## **Knowledge of people's practising sport about the impact of the training agents on the human organism**

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Protein preparations, energy drinks, isotonic and dietary supplements are commonly available on the market. These products are widespread and common worldwide what seems to be harmless and safe for health.

**Aim of the study** The verify the knowledge of people's practising sport about the impact of the training agents on human organism.

The data was collected with authorial, anonymous online survey filled via the Internet. Form included 21 questions. 98 questionnaires were collected.

60,4% of people declared the use of the training agents. The most commonly used training agents: dietary supplements (66.7%) protein preparations (58.3%) and isotonic drinks (35%). The survey results indicate, that the main reason for the use of these medicines is to supplement the vitamins, minerals and hydration

The results indicate, that the respondents have a fundamental knowledge of the composition, available on the market, the preparations and are familiar with contraindications to their use. The analysis point out that respondents are aware of the impact of minerals and caffeine on the functioning of the circulatory system.

**Keywords:** sport, dietary supplements, protein preparations, isotonic drinks

## **Cosmetics applied by men and their adverse effects**

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Men caring about their appearance more and more attach particular importance to the skincare. Applying a lot of cosmetics is increasing the probability of the coming into existence of skin undesired variations which can appear after using them.

The purpose of the work is showing which cosmetics are used by men for the skincare and to indicate factors which can risk of the appearance of adverse reactions after using cosmetics.

Conducted research among students of Silesian colleges. 150 men participated in this study at the age of 18-32. An author's questionnaire was a research tool.

Results of the questionnaire survey showed that men for the everyday care were applying 1-3 cosmetics. One's cosmetics are purchasing mainly in the chemist (87.59% of respondents) in the well-conceived way (64.23% examined). Men sometimes thinking about the ingredients of cosmetic (32.12%) more often purchasing cosmetics in the impulsive way. Appearing of adverse effects after applying cosmetics observed the 28,47% of respondents. Dermatological changes concerned mainly the men with sensitive skin .

After shave products have the greatest popularity among cosmetics using by young men. Adverse reactions after using cosmetics are dependent on the type of complexion and co-occurrences of skin problems of different kind. Also such factors, as: the age of examined persons, the cigarette smoking can increase the risk of dermatological reactions.

**Keywords: cosmetics, risk factors, men care, adverse effects**

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KATOWICE - POLAND



## **SESSION OF PUBLIC HEALTH AND HEALTHCARE III**

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## Evaluation of the awareness of the respondents about taeniasis

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Taeniasis is a zoonotic disease, which occurs rarely, but there are still cases of the disease, often detected quite late.

The aim of this study was to assess the degree of awareness of the respondents about taeniasis, its symptoms, methods of detection and reduction in the possibility of the disease and also sources of infection in people outside the medical environment.

Diagnostic survey was used as a research method. The technique of surveys was used and the research tool was the author's original questionnaire. The study involved 106 random people from all over Poland. The majority of the people surveyed were women – 73.5%, men accounted for 26.5%

The first group consists of the answers about the type of meat consumed, and questions about the origin and veterinary examination of the meat. The second group of the questions concerned the knowledge of symptoms, methods of reducing infections, viewing the contents of the toilet, stool examination for the presence of parasites, deworming. The third group of results are questions about having children and/or pets. 68.86% of the respondents have pets, of which 80.82% (59 people) of the owners deworm them and 43.83% of the owners watch their faeces. 31 respondents have children.

The fact that more than half of respondents – nearly 55% - cannot name the symptoms of taeniasis or makes mistakes when doing it, may prove the need for preventive programs to struggle with zoonotic diseases, which is additionally shown by the fact that only 19.81% of respondents know the methods reducing the risk of infection with taeniasis.

**Keywords: taeniasis, zoonotic diseases**



## **The parents' opinions of small patients (children) from emergency department (ED) on stress intensity factors**

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The hospital or emergency department stay is stressful for each man. Except for personnel, other patients or their families are frequently subject to aggression fits. Many times children stay among patients who start rows. Their fear of health, often life, is additionally escalated by anxiety related to stay among an aggressive person.

The objective of this paper was the evaluation of stress-inducing factors potentially resulting in aggressive behaviours of parents and their way of managing stress at emergency departments.

102 parents of emergency departments from hospitals in Katowice and Sosnowiec were included in this research. Subsequently, the research results were compared with the opinions of adult patients. The research was conducted by own survey questionnaire. Results: 94% of respondents declared their arrival at an emergency department with a child in medical crisis. Waiting time for a doctor is the most frustrating factor for 40% of respondents. 33% are irritated when a doctor is examining other child out of turn. 21% of parents declare experiencing humiliation waiting at an emergency department. 19% admit they clearly express outrage, and 45% of respondents witnessed evident anger of other parent.

High stress level is a factor provoking aggressive behaviours. Parents attempt to manage stress differently, but it is not always compatible with generally approved norms of respecting rights of others.

**Keywords: stress, patient, aggressive patient's behaviours**

## **Ways to cope with stress in society XXI century**

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In recent years, we can observe the increasing pace of life in the society. Usually we have a lot on one's mind, still somewhere in a hurry and have little time to rest. Increasingly, we see that stress has become an integral part of our lives. The aim of this study was to determine whether and how the twenty-first century society copes with stress. Using a proprietary questionnaire collected data on the incidence, forms of stress and how to deal with it 89 people - 56 women (62.9%) and 33 men (37.1%) - in the period from November 2016 to February 2017. The questionnaire allowed the demonstration of the factors having a major impact on the level of stress, including : professional work, study, a vision of the future and financial situation. In most cases, the responses of female and male varied. Men usually cope with stress through entertainment (27.6%), followed by a relaxing moment (25%) and by speaking with a close person (23.6%). In contrast, women as the most common form of coping with stress chose a relaxing moment (29.3%), followed by a conversation with a close person (27.6%) and in third place entertainment (12.9%). In addition, 61 people (68.5%) would like to participate in a lecture or workshop on the methods of coping with stress in everyday life.

**Keywords: stress, ways to cope, society**

## The attitude towards introduction the pharmaceutical care in society

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Pharmaceutical Care is the idea of pharmacists' actions which allows to fully use the potential of pharmacist's versatile education. It also indicates the way patients should be informed about usage of drugs.

Verification of patients' awareness about administering the drugs available without the prescription (OTC drugs - over the counter drugs).

Research was conducted among random group of 360 people, 264 women and 94 men, using survey. In the questionnaire, we posed questions about usage of OTC drugs during the treatment of cold symptoms and about possibilities of harmful effects on health in case of improper administration of these medications. We focused particularly on nose drops and drugs containing paracetamol. We also asked about a pharmacist's role in the process of recovery.

Received outcomes revealed respondents' big consciousness (84,4%) about eventual threats following the usage of OTC drugs – 79,4% of them know about negative impact of paracetamol in case of overdosing. Nevertheless, most of the respondents (54,7%) claim to take more than one medication during treatment of cold. 57,8% using nose drops isn't aware of their addictive influence and 50,9% admit to use them longer than it's advisable.

Patients need to be constantly educated in terms of the danger following administration the OTC drugs without any supervision of physicians or pharmacists. The introduction of pharmaceutical care is justifiable.

**Keywords:** pharmaceutical care, paracetamol

## The assessment of sleep disorders among Polish students

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Sleep and psychophysical health are closely related. There has been noted increased amount of young people suffering from sleeping disorders in Poland nowadays. The aim of this study was to analyze the spread of sleep disorders among students and determine the correlation between sleep disorders and drugs.

The research was conducted with use of a questionnaire, containing Epworth Sleepiness Scale (ESS), Athens insomnia scale (AIS), Manchester Short Assessment of Quality and the questions about the factors which can interfere the sleep. The questionnaire was filled by students from the whole Poland. Statistical design: Statistica 12.

After verification of the study there were 5342 classified respondents. 51% of respondents obtained 8 points AIS which indicates sleep disorders. The life quality of people with sleep disorders is significantly lower than the healthy population ( $p < 0.05$ ). It's strong correlations between sleep disorders and relationships with the family and friends. The 11% of the students are taking sleeping pills/sedatives which strong correlate with sleep disorders. 92.3 % students were drinking alcohol during last 3 months.

In the study group sleep disorders are present among both women and men, wherein the women are more vulnerable. There is a correlation between the used sleeping pills and sleep disorders. The life quality of people with sleep disorders is significantly lower than the healthy population.

**Keywords: sleep disorders, students, insomnia**

## **Level of stress among students from Cracow and their coping with stress strategies**

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Stress has a negative influence on the physical, mental and social health. Especially among young adults a vulnerability to stress is observed. Stress affects people in different ways and there are various mechanisms of coping with it.

The aim of our study was to determine the level of stress in the population of students from Cracow, to correlate the occurrence of stress with other factors and to describe strategies of coping with stress among young adults.

A cross-sectional study was performed in March 2017 in the group of 264 students (150 women, 114 men) from 7 Cracovian universities using two questionnaires: Perceived Stress Scale-10, which measures stress' level, and mini-COPE, which describes coping with stress strategies.

The increased level of perceived stress was revealed in 10.6% participants of the study. There was a statistically significant relationship between the occurrence of stress and gender ( $p=0.04$ ), chronic diseases ( $p=0.00$ ) and smoking ( $p=0.01$ ). In mini-COPE questionnaire the most common strategies used by the students were: active coping with stress, planning, acceptance.

The level of stress is associated with gender, chronic diseases and smoking. Factors such as physical activity and the kind of studies do not contribute to the occurrence of stress. In the group of people with the elevated perceived stress level, in contrary to students with low and average level of perceived stress, the most common strategy of copying with stress was blaming themselves.

**Keywords:** perceived stress, students, coping with stress strategies

## **Awareness Silesian universities' students about over-the-counter painkillers and needs of implementation Pharmaceutical Care in this case**

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Common usage of over-the-counter (OTC) painkillers among students, defines purpose of making research on their knowledge of this topic.

Checking students knowledge about OTC painkillers and examining possibility of existence of Pharmaceutical Care, conducted by pharmacists in chemist's.

The studies were conducted in 2016 and involved 602 students from Silesian universities. The sample was differentiated for students from medical and non-medical universities. All of them were examined by questionnaire which contained questions, that verified their knowledge about OTC painkillers and position about Pharmaceutical Care.

Researchers observed big difference of knowledge between students from medical and non-medical universities. Students from medical universities showed better awareness active substances in specific medical products. Both groups have little knowledge about side effects of painkillers. Small portion of responders talk with pharmacists about purchased drug, but the vast majority declares that if they would have an opportunity, they would do it. Additionally, 83% of them said that conversation with pharmacist could help with avoiding side effects.

Even though 75% of responders declare that they did not experience side effects of painkillers, after observing level of their knowledge it can be assumed that some of responders had no awareness that some of those effects occurred. It shows that implementation of Pharmaceutical Care in this area is not only desirable, but necessary.

**Keywords: OTC, painkillers, side effects, Pharmaceutical Care**

## **The social status and the prestige of the nursing profession in nurses opinion**

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The social status and prestige of the nursing profession are determined by various external and internal factors. The image of the profession is created by a beliefs of nurses, other people`s opinions, professional and personal qualities. Nurses want to care for their good image in comparison to others, but it is laborious and requiring.

The main aim of researches was designating nurses opinion about social status and prestige of their profession.

Representative sample was a group of 110 nurses working in department of the cardiac surgery. In the research work was used a questionnaire form and analysis answers of respondents.

More than 75% of nurses answered that they alone determined the selection of their profession. Approximately 55% of nurses claim they are satisfied with their profession. Only 15% of respondents felt that profession of a nurse is respected by the society. As the most positive features of the profession, respondents recognized the large level of knowledge and the dynamics of the profession and the most negative stress and a lot of responsibility. Among the surveyed nurses, 66% of them would not turn his profession to another.

In nurses opinion their profession is noble and he acting for a good cause, but prestige and position is weak in comparison to the other. The main factor this evaluation are low earnings, the directed public evaluation and the small autonomy of the profession.

**Keywords: nurses, public opinion, prestige**

## **Determination of risk of human exposure to ticks and *Borrelia burgdorferi sensu lato*, *Anaplasma phagocytophilum* and *Rickettsia helvetica* in selected recreational areas of the Gorlice district.**

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In Poland tick *Ixodes ricinus* is main vector of many dangerous pathogens i.a. *Borrelia burgdorferi sensu lato* [Bbsl], *Anaplasma phagocytophilum* [Ap] and *Rickettsia helvetica* [Rh].

To determine the risk of exposure to ticks and Bbsl, Ap, Rh in selected recreational areas of Gorlice district.

Ticks were collected using the flagging method from the vegetation in selected recreational areas (park and forest) and conserved in 70% ethanol. Then they were determined to species and developmental stage. DNA was isolated by the ammonia method. Concentration of DNA was measured spectrophotometrically. Pathogens were detected by PCR. To the identification of Bbsl a pair of primers specific for the gene coding flagellin was used; Ap - a pair of primers specific for a fragment of gene 16S rRNA was used; Rh - a pair of primers specific for a fragment of gene *gltA* was used. The amplification products were separated electrophoretically in 2% ethidium bromide stained agarose gels and visualized in UV light.

In total 118 *Ixodes ricinus* ticks were collected: 13 females, 10 males, 38 nymphs and 57 larvae. Most of ticks were collected from forest (80.5%). Molecular studies were carried out on adults and nymphs. In total pathogens were showed in 34.4% of studied ticks. Ap showed in 1/61 (1.6%) and Rh 20/61 (32.8%) of studied ticks. Bbsl were not found in studied material.

The studies revealed high risk of human exposure to ticks in studied areas of Gorlice district and high risk of exposure to tick-borne infections of Rh and low risk of exposure to tick-borne infections of Ap in selected areas for inhabitants and tourists.

**Keywords:** *Ixodes ricinus*, *Borrelia burgdorferi sensu lato*, *Anaplasma phagocytophilum*, *Rickettsia helvetica*, Gorlice



## Relationship between NO<sub>2</sub>, SO<sub>2</sub> concentration and lung cancer morbidity in Dolnośląskie voivodeship compared to whole Poland's population.

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SO<sub>2</sub> pollution arises mainly during burning of fossil fuels, while NO<sub>2</sub> concentration is usually related to road transport. Based on numerous scientific research, it's believed that the NO<sub>2</sub> and SO<sub>2</sub> are linked to increased morbidity of many diseases. The aim of the study was to find out relationship between air pollution (measured with NO<sub>2</sub> and SO<sub>2</sub> concentration) and lung cancer morbidity and show possible differences among Poland's and Dolnośląskie voivodeship. We used Microsoft Excel to analyze databases of the National Cancer Registry (2011-2014), Chief Inspectorate for Environmental Protection (2011-2015), WHO Air Quality Guidelines 2005. In 2011-2015, in Dolnośląskie voivodeship concentration of NO<sub>2</sub> had increasing tendency while national average of NO<sub>2</sub> maintained a constant level. In this period concentration of SO<sub>2</sub> remained at a high level while national average was decreasing. The morbidity of lung cancer in the analyzed period increased both in Dolnośląskie voivodeship and Poland's populations. Dolnośląskie voivodeship: Lung cancer morbidity (ICD10: C33+C34): 2011-1761; 2012-1864; 2013-1841; 2014-1891. NO<sub>2</sub> annual mean  $\mu\text{g}/\text{m}^3$ : 2011-16,5; 2012-14,6; 2013-14,4; 2014-17,2; 2015-17,7. SO<sub>2</sub> 24hour-mean  $\mu\text{g}/\text{m}^3$ : 2011-2,1; 2012-2; 2013-1,9; 2014-2,1; 2015-2,1. Poland: C33+C34: 2011-20837; 2012-21870; 2013-21556; 2014-22032. NO<sub>2</sub> annual mean  $\mu\text{g}/\text{m}^3$ : 2011-19,7; 2012-18,5; 2013-18,3; 2014-18,1; 2015-18,4. SO<sub>2</sub> 24hour-mean  $\mu\text{g}/\text{m}^3$ : 2011-4,6; 2012-6,6; 2013-2,4; 2014-2,1; 2015-1,6. WHO Guidelines: NO<sub>2</sub>-40 $\mu\text{g}/\text{m}^3$  annual mean; SO<sub>2</sub>-20 $\mu\text{g}/\text{m}^3$  24hour mean. Increasing concentrations of NO<sub>2</sub>, may indicate that it has an impact on the incidence of lung cancer. Unlike SO<sub>2</sub> concentrations which has remained at a similar level in recent years.

**Keywords:** NO<sub>2</sub>, SO<sub>2</sub>, air pollution, lung cancer

## **Student's health behavior.**

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**Abstract Aim:** The analysis of health behaviour of students

The analysis was conducted on 290 students of 3 departments such as 90 midwifery students, 99 people studying physiotherapy and 101 nursing students. Method of diagnostic survey, using tools such as self-esteem questionnaire was used (consisting of 11 multiple choice questions) and diagnostic scales.

Regardless the department of studies, the most of the students leads an averagely healthy lifestyle. Healthy lifestyle is the most common among students of physiotherapy (32,3%). 8,9% of nursing students lead an unhealthy lifestyle. Chi-2 test shows there is a statistical connection between the field of study and lifestyle. The most respondents rate their activity as being on an average level. Physiotherapy students exercise significantly more than midwifery and nursing students. Regardless the field of studies, the major part of respondents do not smoke cigarettes. Out of the surveyed group 2.2% students of midwifery and 1% of physiotherapy students admitted taking psychoactive substances.

Students lead an averagely healthy lifestyle. The largest group leading a healthy lifestyle comprises of physiotherapy students (32.3%). The most common sport practice physiotherapy students. On the other hand, an unhealthy lifestyle can be noted among 8.9% of nursing students. The majority of medical students do not smoke cigarettes

**Keywords:** health behavior, lifestyle, activity, exercise

## Self-esteem and body image of students

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The aim of the study is an analysis of self-esteem and body image of students.

The research has been carried out on a group of 290 students: 90 midwifery, 99 physiotherapy and 101 nursing students. Method used: diagnostic survey. Using tools such as self-esteem scale (SES M. Rosenberg, IZZ Z. Jurczyński, IPAQ) and self-rating scale (consisting of 11 multiple choice questions).

Students do not differ significantly in terms of self-assessment scale. It turned out, however, that the physiotherapy students are characterized by the lowest score of positive body image (28.3%) rather than midwifery (46.7%) and nursing (43.6%) students. It is worth to notice that according to Kruskal-Wallis test nursing students have a lower BMI than students of midwifery and physiotherapy ( $H = 90.435$ ,  $p < 0.01$ ). There is a strong and statistically significant correlation between self-esteem and body image ( $R = 0.395$ ,  $p < 0.01$ ). It has been found that if the higher the BMI, the lower self-esteem is ( $R = -0.145$ ,  $p < 0.05$ ) and a worse body image ( $R = -0.206$ ,  $p < 0.01$ ). While women are characterized by significantly a better body image than men ( $Z = -4.858$ ,  $p < 0.01$ ). In the case of self-esteem we found that it is higher if students originated from the larger town ( $F = 2.982$ ,  $p = 0.052$ ). As it turned out, people leading a healthy life, have a higher self-esteem than those with average or unhealthy lifestyle ( $Z = -4.964$ ,  $p < 0.05$ ). Similarly, a significantly better body image concerns people leading a healthy lifestyle, rather than those leading an average or unhealthy lifestyle or ( $Z = -2.978$ ,  $p < 0.05$ ).

Summary: In the group surveyed students there is a strong correlation between self-esteem and body image. It has been found that the higher the BMI, the lower self-esteem and inferior body image is. Physiotherapy students have the lowest score of body image and the highest BMI. Due to gender, women have a definitely better body image than men. People leading healthy lifestyle have high self-esteem and better body image. It was noticed that self-esteem among the respondents is higher, if is the place they come from is bigger.

**Keywords:** Self-esteem, body image, students

## Canned tuna as the source of human exposure to mercury

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Tuna is an excellent source of important nutrients such as protein, vitamin D, polyunsaturated fatty acids and other essential elements. However, as a predator fish, it is also accumulating heavy metals such as mercury.

The aim of this work was to evaluate the concentration of mercury in samples of tuna fish packed in cans. Verify if concentration of Hg was related to the region of origin and compare the results with the current norms.

30 canned tuna from varied producers were purchased in different supermarkets. Tuna fish came from the following regions: Thailand, Mauritius, Ecuador, Philippines, Seychelles, Italy, Indonesia, Ghana and Spain. In samples of fish Hg concentrations were determined by AAS method (AMA 254).

The average content of mercury in analyzed samples was  $0,15575 \pm 0,12129$  ppm. The concentration of Hg changed depending on the region of fishing. The highest result (0,47031ppm Hg) was in the tuna derived from Mauritius, the lowest (0,020784ppm Hg) from samples from Thailand

Mercury was present in all studied samples of fish. Consumption of canned tuna can be a potential source of human exposure to mercury. It is important, that in any tested samples of tuna fish Hg concentrations did not exceed EU standards.

**Keywords: tuna, mercury, ASA**

## **Actual state of knowledge among non-medical students on common endocrine disorders**

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The most common endocrine diseases include hypothyroidism and hyperthyroidism, as well as parathyroid disease. Hyperthyroidism is a disease caused by excessive production of thyroid hormones and it is characterized by tachycardia, diarrhea, weight loss, and exophthalmos. Hypothyroidism occurs with constipation, anemia or bradycardia. Parathyroid diseases are associated with disorders of calcium and phosphorus metabolism.

The aim of this work was to show the level of knowledge of endocrine disorders among students from non-medical studies.

We carried out a voluntary questionnaire via the Internet. People between aged 19-21 years of age studying at a Technical University participated in this survey.

We have gathered 100 answers to our survey, 24 of them were from women and 76 from men. 26% of respondents did not know where the thyroid gland is located. Only 9% of people answered that the hormone secreted by the thyroid gland is thyroxine and 23% answered that this hormone is cortisol. Only 26% of people answered that the hormone secreted by the parathyroid gland is parathyroid hormone and 19% answered that the hormone is ACTH. The most marked symptoms of hyperthyroidism were asthenia (43%) and constipation (29%).

The survey conducted survey showed gaps in knowledge concerning diseases such as hypothyroidism and hyperthyroidism. The results from the survey show that young people can't identify common symptoms of endocrine disorders.

**Keywords: endocrine disorders, hyperthyroidism, hypothyroidism**

## **Health assesment and functioning of people with dementia participating in the Meeting Centres Supporte Programme (MCSP) – MeetignDem Project.**

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An increasing number of elderly people struggles with dementia which often excludes them from social life. A MeetingDem international project, in Poland financially supported by NCBiR, focused on the growing problem of dementia consequences. It aimed to establish socially integrated Meeting Centres for people with dementia and their carers in three European countries, which basic goals are to return people living with dementia to daily activities and make them socially active again.

The aim of the study was to assess changes in health status, quality of life and social support among MCSP participants compared to usual care (UC) users before (M1) and after 6 months (M7) of attending the programme. In our work we analysed data gathered from 20 MCSP participants and 20 UC. We used standardized psychometric tools: EQ-5L-DL, DSSI and DQoL.

In 60% of the MCSP participants a change in social support (DSSI) was observed, moreover the results showed the increase of DSSI mean value (from  $x(M1)=14.5$  to  $x(M7)=16.2$ ), while in UC group mean values remained the same ( $M1=M7=16$ ). Health status increased significantly among the MCSP users (10 points on average), comparing to 7 points decrease in UC group [ $p<0,05$ ]. 100% of participants were satisfied with attending the Meeting Centres.

Providing social support for people living with dementia through their participation in the MCSP, which gave people a huge satisfaction, has improved their subjective health status and social support. Thus nowadays, creating more centres for people with dementia based on the Dutch model seems to be a response to the challenges posed by the consequence of the epidemiology of neurodegenerative diseases.

**Keywords: dementia, MeetigDem, social support**

## **Society awareness of antibiotic therapy**

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What knowledge do people have about antibiotic therapy, when drug resistance becomes a huge problem?

The purpose of the research was to evaluate peoples knowledge about antibiotic therapy and influence of people's behaviour on drug resistance.

Results were based on questionnaire survey of 400 people. Questionnaire had 36 questions concerning general knowledge about antibiotic action, patients' needs and feelings about antibiotic therapy.

84% interviewees follow the doctors' recommendations but only 2/3 of questioned never stopped an antibiotic therapy when they felt better. Taking antibiotics by people without knowledge leads to antibiotic resistance.

Additionally, more than half of interviewees thinks that antibiotics are effective for viral infection. 7% of people were taking antibiotics without doctor's knowledge.

Results of research show an insufficient level of knowledge among society about medical indications and contraindications to taking antibiotics. They are used without justification, too short or too rashly, what is favourable to evolving of antibiotic resistance. For most questioned, doctor is the basic source of knowledge about antibiotic therapy. Medical personnel should provide a detailed information to patients on applied therapy.

## **Sleep disorders and daytime sleepiness in patients with diabetes mellitus type I and type II**

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Diabetes mellitus is a group of metabolic diseases which result from defects in secretion and/or action of insulin which main symptom is hyperglycaemia. Over the last years diabetes has reached the status world's most important health issue due to its still increasing prevalence. In 2040, an estimated 642 milion people will be diagnosed with diabetes.

Presentation of the relationship between diabetes and the prevalence of sleep disorders and daytime sleepiness in subjective opinions.

An anonymous questionnaire consisting of Epworth Sleepiness Scale (ESS), the scale of Sleep Quality (SQ) and author's own questions were used for assessment. The study involved 381 patients (222 women and 159 men) at age 12-87. (Diabetes mellitus type I: age 12-38, Diabetes mellitus type II: age 38-87)

The analysis showed that patients with type 1 diabetes more frequently experience excessive sleepiness and twice as frequent suffer from daytime sleepiness than in patients with type 2 diabetes. Moreover patients with high level of hemoglobin A1c fasting more frequently complain of sleep abnormalities and daytime sleepiness. Properly treated type 1 and 2 diabetes, with A1c levels below 6,5% do not affect daytime sleepiness.

The results of this study reveal a correlation between diabetes and the prevalence of excessive daytime sleepiness. A significant number of respondents also expressed dissatisfaction with quality of their sleep.

**Keywords: epidemiology, diabetes mellitus, daytime sleepness**



INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF CLINICAL ONCOLOGY**

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## **Histopathological characteristics of gastric cancer with HER2 protein overexpression or HER2 gene amplification.**

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HER2 protein overexpression and HER2 gene amplification are prognostic and predictive factors in gastric cancer.

The aim of the study was to describe histopathological characteristics of gastric cancer with overexpression or amplification of HER2 (HER2 (+)). Cases of gastric cancer diagnosed at Department of Pathomorphology between 2015-2016, and examined for HER2 protein expression with immunohistochemical (IHC) assay or for HER2 gene amplification with in-situ hybridization (ISH) test were retrospectively re-evaluated.

Materials from 243 patients (152 men and 91 women) were enrolled in our study. Median patients' age was 70 y (range 24 – 91).

Results of IHC test were: 137 (56.4%) cases were scored as negative – HER2 (0), 56 (23%) cases - as negative - HER 2 (1+), 22 (9.1%) cases - as equivocal - HER2 (2+), and 28 (11,5%) cases - as positive – HER2 (3+). HER2 amplification was found in one of 3 equivocal (HER2 (2+)) cases tested with ISH. Overall, 29 (11.9%) cases of HER2 (+) gastric cancer were diagnosed. HER2 (+) gastric cancer was found in 19 men and 10 women; median age of these patients was 76 y (range 24 - 90). Among HER2 (+) cancers were: 25 cases of tubular adenocarcinoma, 2 cases of poorly cohesive carcinoma, 1 case of adenocarcinoma with focal mucinous differentiation and 1 case of adenocarcinoma with focal papillary differentiation. Overexpression or amplification of HER2 was found in 11.9% gastric cancer cases.

Age distribution and sex proportions were similar among patients with HER2 (+) and HER2 (-) cancers. The majority of the HER2 (+) cancers were tubular adenocarcinomas.

**Keywords: gastric cancer, HER2 gene amplification, HER2 protein overexpression, histopathological characteristics**

## Evaluation of the selected complete blood count parameters in patients with GBM(IV).

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Glioblastoma multiforme comprises 80% of malignant brain tumors in adults. It is characterized by an aggressive clinical course manifested by a great infiltrative potential, an increased mitotic activity and a presence of necrotic tissue. Focal neurological deficits due to the peritumoral edema and glioma-induced neuroinflammation arise in end-of-life (EOL) phase of the advanced cancer. As a consequence, GBM diagnosis usually comes late. The most common symptoms are initially non-specific and include headaches, vertigo, aphasia, numbness and paresis of extremities.

The object of the study was utility analysis of complete blood count parameters (hemoglobin, leukocytes, hematocrit) in routine evaluation of both tumor progression and general condition of GBM patients.

Medical records of 49 GBM (IV) patients (between 2011 and 2015).

The retrospective review and analysis of medical records of GBM (IV) patients, who were divided into two groups: group 1 consisted of patients, who underwent radical treatment and group 2 consisted of patients, who underwent palliative treatment with temozolomide and radiotherapy. The patients were treated in Maria Skłodowska – Curie Memorial Cancer Center and Institute of Oncology Gliwice Branch.

There are no correlation between central nervous system lesions induced by the malignant phenotype of GBM (including relapsed GBM) and complete blood count parameters. Because these parameters can be only used for evaluation of the clinical response to systemic treatment there is still a necessity to of looking for specific blood-based tumor markers in order to extend routine diagnostic tests for GBM.

**Keywords: Glioblastoma multiforme, morphology, inflammation**

**Krukenberg tumour – institutional experience of three decades.**

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Krukenberg tumour (KT) a metastatic malignancy to the ovary, mainly from gastrointestinal cancer. It is rare, accounting for only 1% of all ovarian tumours.

To describe changes in the clinico-pathological features of KT over time.

Institutional case records of KT diagnosed between 1989 and 2016 were retrospectively reviewed. The study cohort was divided into two groups: I – women diagnosed in the years 1989-2006 (25 cases) and II – women diagnosed in the years 2007-2016 (34 cases).

Cases of 59 patients were evaluated. The median age at diagnosis of KT was 52 years (range, 25-84). The median tumour diameter was 8.0 cm (range, 1.0-25.0). The origin of the metastasizing disease was identified in 19/59 (32%) patients. In 7 cases, a primary cancer was diagnosed previously and metastases to the ovary were suspected. In 10 cases both malignancies were diagnosed during the same surgery. In 2 cases the primary tumour site was found after KT diagnosis. Data is missing for 40 cases. The stomach was the primary site in 14/19 (75%) cases, the large intestine in 3/19 (15%) cases, the small intestine and gallbladder in 1/19 (5%) case each.

The median age of group I was 45 years (range, 25-67) and of group II - 55 years (range, 33-84) [ $p < 0.05$ ]. The median tumour diameter of group I was 9.0 cm (range, 6.0-25.0) and of group II - 7.0 cm (range, 1.0-18.0) [ $p < 0.05$ ]. A primary cancer was diagnosed previously in 4 patients of group I and in 3 of group II. The origin of the metastasizing disease was identified in 10 cases of group I and in 9 of group II.

Most of KT cases were treated because a primary ovarian tumour was suspected.

**Keywords: Krukenberg tumour, ovary, metastases**

## **Stomach cancer. Patients' features and time from first symptoms to diagnosis – retrospective study**

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Stomach cancer is 5th most common cancer globally. Its nonspecific early symptoms cause diagnostic difficulties that result in low survival rate.

To present patients' features and factors contributing to their treatment outcomes.

The study included 88 patients (59 males, 29 females), aged 35-82 (median 63) hospitalized due to stomach cancer in our Department from 1998 to 2015. Data was obtained from medical records.

Tumors (tu.) were found mostly on gastroscopy – single examination in 63 patients (69,3%), two or more in 7 (7,9%). The histological types of tu. were: adenocarcinoma (adenoca.) (n=72; 80,9%), mucoepidermoid ca. (11; 12,36%), anaplastic ca. (4; 4,5%) and GIST (2; 2,3%). At the moment of diagnosis tu. were usually advanced – TNM stage IV in 49 patients (55,7%) and metastases confirmed in 50 (56,8%). Tu. were most often located in the body of stomach (30,6%). Mean time between first symptoms and diagnosis was 5,6 months. That period was positively correlated with the age of patients ( $p<0,01$ ). Advanced tu. were more often found in older patients –stage IV patients' mean age 64,3 vs 56,7 in patients with stage I tu. ( $p<0,05$ ). In comparison to mucoepidermoid ca., adenoca. was more often present in older patients (mean age 64,8 vs 54,1;  $p<0,01$ ). Significantly shorter time to diagnosis was found in patients diagnosed after 2010 comparing to timeframe 1998-2010 (4,25 vs 7,37 months;  $p<0,01$ ), however, difference in 12-month survival was marginal (57% vs 60%).

Despite improvement of gastric cancer therapy, outcomes are still not satisfactory. Raising awareness of nonspecific symptoms of gastric neoplasm is crucial for quick diagnosis and can increase patients' survival.

**Keywords: Gastric cancer, chemotherapy, diagnosis, stomach, neoplasm, symptoms, survival**

## **Autologous hematopoietic stem cell transplantation (AHCT) for POEMS syndrome: single center experience**

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POEMS syndrome (Polyneuropathy, Organomegaly, Endocrinopathy, Monoclonal protein, Skin changes) is a rare paraneoplastic disorder secondary to a plasma cell dyscrasia. Diagnosis is difficult due to overlapping symptoms and requires the cooperation of various specialists. Standard treatment has not been established yet.

The objective of our study was to evaluate the efficacy and safety of AHCT as a treatment method for POEMS syndrome.

We retrospectively evaluated the safety and clinical outcome of patients with POEMS who were autotransplanted in our center in the years 2011-2017. Medical records of 3 female patients at median age at transplant of 58 years (range 54-62), undergoing AHCT for POEMS in our hospital were analyzed.

All patients were found to have IgA lambda protein and bone marrow was infiltrated in median of 1% (range 1-16). Clinical manifestations were following: Castelman disease(n=1), skin changes(n=1), organomegaly(n=1), endocrinopathy (n=2), overhydration(n=1). Two out of 3 pts had an increased VEGF level. The median time from diagnosis to AHCT was 13 months (range 6-29). Before AHCT all patients received myeloma-related chemotherapy. Conditioning included high-dose of melphalan. The median number of transplanted CD34+ cells was  $2.81 \times 10^6/\text{kg}$  (range  $1.89-3.62 \times 10^6/\text{kg}$ ). There was no grade 3/4 adverse events after AHCT. The median follow-up after AHCT was 56 months (range 8-71) and at the last contact, all patients were alive and in good clinical condition.

AHCT for POEMS seems to be a feasible procedure with high efficacy and manageable toxicity profile. It seems likely that AHCT may control the clinical symptoms related to POEMS.

**Keywords:** paraneoplastic syndrome, POEMS syndrome, autologous stem cell transplantation, Autologous hematopoietic stem cell transplantation, AHCT

## Survivors of childhood brain tumor- are they a high risk group for bone mineral density deficits?

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Central nervous system tumors are the most common solid tumors in children. During the last years, the advance of the diagnosis and treatment have caused a significant increase in the number of survivors of childhood neoplastic diseases. Consequence of the cancer and its treatment have been shown to be associated with a higher risk of bone metabolism abnormalities.

To assess bone mineral density and calcium-phosphate homeostasis in survivors of childhood brain malignancies.

The study group included 25 patients (12 girls, 13 boys). The mean age at the time of study was 12.9 years (range 5.4 - 20 years). At diagnosis of cancer, the mean age was 7.1 years (range 0.8 - 16.9 years). The mean follow-up time after the completion of treatment was 4.4 years (range 0.2 - 10.5 years). Bone mineral density, physical examination, anthropometric measurements, vitamin D, endocrine status, electrolytes serum concentration and 24-hour urine collection were assessed for each patient.

We observed that most of the patients (n=19, 76%) had decreased BMD score at the lumbar column, the mean BMD Z-score was: -1.74 (range -4.6 to 0.7). Nine patients (36%) were diagnosed with low BMD (defined as BMD Z-score  $\leq$  -2.0), mild BMD deficits (defined as BMD Z-score range -1.0 to -2.0) were in ten patients (40%). Nine patients (43%) had IGF-1 deficiency and they were more likely to have lower BMD Z-score (p=0.014). There was a moderate negative significant correlation between follow-up time after the completion of treatment and BMD Z-score (r= -0.41, p < 0.05).

Survivors of childhood brain tumors are the high risk group for bone mineral loss and developing osteopenia or osteoporosis.

**Keywords:** brain tumor, childhood, bone mineral density, osteoporosis



## **Pretreatment NLR and residual cancer burden index (RCB) in breast cancer patients treated with neoadjuvant chemotherapy**

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Neutrophil to lymphocyte ratio (NLR) is a marker of chronic, subclinical inflammation. Inflammation often occurs during carcinogenesis and increased value of NLR is considered to be related to less favorable prognosis (i.a. shorter overall survival and recurrence free survival) in different malignancies. NLR is also a promising factor of responsiveness to the treatment. In terms of neoadjuvant treatment, different histopathological features after surgery might be assessed. One of those is RCB in breast cancer patients. Many of clinical study groups in prospective clinical trials have incorporated this index as a marker of response to chemotherapy.

Our research aimed to evaluate the correlation between NLR and the patients response to neoadjuvant chemotherapy. RCB was used as a gauge of disease response to the treatment.

Conducted retrospective analysis included 21 breast cancer patients who received neoadjuvant chemotherapy at Oncology Clinic Jagiellonian University Collegium Medicum between December 2014 and July 2016. The absolute peripheral neutrophil and lymphocyte values were obtained from a pretreatment complete blood count. Residual cancer burden (RCB) was calculated by pathologists as a continuous index combining pathologic measurements of primary tumor bed area (size and cellularity) and nodal metastases (number and the diameter of largest metastasis). Statistical Kolmogorow-Smirnow and Shapiro-Wilk tests were used to check if the data is in the normal distribution and then Pearson correlation coefficient (PCC) was calculated.

Median age of included patients was 56,33 years. The majority of patients (81%) was treated with anthracycline and taxanes containing regimen (AT). 67% patients were luminal B, 19% were luminal A, 9,5% were non-luminal HER2+. Triple negative feature occurred only once (4,7%). RCB range was from 0,961 to 4,708 (mean= 3,096). The study revealed that NLR has a negative correlation with RCB ( $p < 0,01$ ).

In our study the elevated NLR was associated with better response to neoadjuvant chemotherapy. Our small group of patients was not enough to clearly confirm these finding and this issue needs further studies.

**Keywords: breast cancer, NLR, RCB, neoadjuvant chemotherapy**

## Delay of colorectal cancer diagnosis

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Characterization of patients with colorectal cancer at the moment of diagnosis taking into account the demographic and clinical factors as well as identifying the consequences of delay in diagnosis.

The investigation included 69 patients treated in the Department of Internal Medicine and Oncological Chemotherapy diagnosed with colorectal cancer (35 male and 34 female).

The median age was 65 years (35-82 years range). The mean time between the appearance of first symptoms to the final diagnosis was 5 months (range 0-36 months). Cancer was diagnosed after a longer period of time among men than women ( $r=0,25$ ;  $p=0,04$ ). The aforementioned delay was connected with an increased amount of patients with liver metastases at the moment of diagnosis. Higher tumor size resulted in a higher frequency of gastrointestinal perforations. Appearance of metastases was connected with the deterioration of performance status measured with the ECOG score ( $r=0,87$ ;  $p<0,0001$ ). The concentration of CEA antigen strongly correlated with the clinical stage of the disease ( $r=0,32$ ;  $p=0,022$ ). Elevated serum activity of GGTP and ALP were more sensitive as markers of the presence of liver metastases than ALT and AST ( $r=0,37$ ;  $p=0,004$  and  $r=0,29$ ;  $p=0,021$ ; correspondingly). 45% of patients had unelevated CEA marker serum concentration (N=32).

Continuous effort in increasing the oncological awareness amongst doctors as well as patients is needed. Practical usage of cancer screening guidelines and a proper diagnostical process of the gastrointestinal tract allows a diagnosis of cancer on its earlier, curable stages. The measurement of the serum level of CEA antigen cannot be a substitute to other tests.

**Keywords:** Colorectal, cancer, diagnosis, markers, liver, metastases

## **A very rare coexistence of Waldenström's macroglobulinemia and Multiple myeloma with demyelinating neuropathy – case study**

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The occurrence of Waldenström's macroglobulinemia (WM) and multiple myeloma (MM) in the same patient is very rare. Until now only 3 similar cases has been described. They are both mature B-cell neoplasms characterized by paraproteinemia and primarily bone marrow infiltration. Paraproteinemic demyelinating neuropathy (PDN) is a frequent neurological complication in WM.

71-year male presented to the oncology clinic with paraparesis, leg pain, numbness and superficial sensory disturbances after nearly 12 months of treatment in neurological clinic. The patient could not walk independently.

In conducted tests two different monoclonal proteins were found. Immunofixation electrophoresis showed two different monoclonal proteins: K light chain was specific to IgM and  $\lambda$  light chain was specific to IgA. Flow cytometry and trephine biopsy confirmed two separate cell clones: dominant with CD20+ phenotype and plasmocytic with CD38+ CD138+ phenotype. Application of Rituximab, Cyclophosphamide, Fludarabine and Dexamethason (R-FCD) in six courses not only decreased level of serum immunoglobulins and light chains but also allowed the patient to walk again. Complete remission of WM and partial remission of MM was achieved. A 43-month follow-up showed that his disease is stable.

The occurrence of Waldenström's macroglobulinemia and multiple myeloma in one patient is very rare. The treatment regimen R-FCD was effective in both WM and MM.

**Keywords: multiple myeloma, Waldenström's macroglobulinemia, paraparesis, trephine biopsy, biclonal**

## The role of preoperative blood parameters as a potential prognosis predictors in radical gastric cancer treatment

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Despite a huge decline of gastric cancer incidence rate in a past decades it is still the second cause of death on the world due to malignant neoplasm. Thanks to neoadjuvant chemotherapy carried on as a gold standard 5year survival has been improved. Yet there is still a lack of predictive factors affecting staging and malignancy in gastric cancer.

The purpose of our study was to evaluate preoperative hematological parameters that could predict malignancy and staging in gastric cancer.

The retrospective study took place in Clinical Department of Oncology. 47 disease histories of patients with gastric cancer diagnosed from 2013 to 2016 were developed in November 2016. According to a plan operation was conducted after 3rd cycle. A wide variety of hematological parameters were analyzed and correlated with grading and staging single characters. We used Pearson/ Spermán test to describe data.

In total, 47 patients with gastric cancer met the pre-setting inclusion criteria. 36 of them received the entire cycles chemotherapy. However, there was no statistically significant correlation between discontinuation of chemotherapy and subtotal surgery. Due to the hematological biomarkers, elevated PLR suggests correlation with higher risk of treatment failure. The statistically significant results show the correlation between NLR and grading ( $p=0,0269$ ) and also between NWR and thickness infiltration ( $p=0,028$ ).

These findings suggest that the hematological biomarkers are predictive of poor prognosis. However, to prove the accurate correlation between them we need a research on a larger group of patients with a gastric cancer.

**Keywords:** Hematological parameters, gastric cancer, prognosis;

## **Correlations between histological aspects and risk factors with potentially carcinogenic impact in bronchopulmonary cancer**

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Bronchopulmonary cancer(BPC) is a very common form of malignancy in modern civilization. Romania and some other countries in Eastern Europe are experiencing an increase in mortality caused by BPC. Late diagnosis and high mortality rates are caused by the absence of a nationally adequate medical education, as well as by a rapid evolution and, by sometimes asymptomatic character of the disease.

Our research aimed at identifying correlations between histological types of BPC and the risk factors mentioned below.

The results of this research study is based on a retrospective analysis of anamnestic data combined with clinical and laboratory examinations. A total of 153 patients was statistically analyzed in terms of risk factors such as: age, gender, geographical origin, smoking, exposure to toxic environment, etc..

The results are presented in tables and graphic images accompanied by relevant histological pictures. The frequency of BPC is relatively constant with a slight increase in the last few years. The most affected age group is between 60-69 years. Dominating microscopic aspects are: epidermoid carcinoma followed by adenocarcinoma. Epidermoid carcinoma is the most common type, regardless of age group or gender.

BPC remains an issue of major concern in terms of frequency, evolution and prognosis. Establishing methods of screening in the general population would have a beneficial role in the early detection of pulmonary neoplasia, which would contribute to a favorable course of disease and better prognosis.

**Keywords: bronchopulmonary cancer, carcinogenic impact, lung injury, histological aspect, risk factors**

## Does exposure to environmental pollution increase the incidence of CNS tumors in children in Silesia?

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Tumor of Central Nervous System (CNST) are the second most common cancer among children after leukemia.

Analyze epidemiological incidence of CNST among children in Silesia in the years 2000-2016 with particular emphasis on the degree of exposure of patients to air pollution.

Analysis of the incidence of CNST among children treated in the Department of Oncology GCZD in the years 2000-2016, was carried out. The studied group comprised 182 children (85 girls, 97 boys) aged 0.17-18.75 years. Based on GUS data, Standardized Incidence Ratios (SIR) were calculated. Data were analyzed in 6 designed districts. Average Annual Air Pollution Parameters (PM<sub>10</sub>, PM<sub>2.5</sub>, C<sub>6</sub>H<sub>6</sub>, BaP, NO<sub>2</sub>) were calculated on the basis of data provided by GIOŚ.

The highest SIR for age (according to the European Population) for CNST (n/100 000) was recorded in the district which includes Rybnik-Jastrzebie agglomeration (1.44). The lowest rate was in the North zone (0.86). Mean SIR for Silesia was 1.16. The highest average annual values PM<sub>10</sub> (51.1 µg/m<sup>3</sup>), PM<sub>2.5</sub> (36.9 µg/m<sup>3</sup>), BaP (PM<sub>10</sub>) (10.9 ng/m<sup>3</sup>), C<sub>6</sub>H<sub>6</sub> (3.3 µg/m<sup>3</sup>) were recorded in Rybnik-Jastrzebie agglomeration. The highest mean annual NO<sub>2</sub> value (35.4 µg/m<sup>3</sup>) was in the Katowice area. The lowest average annual values PM<sub>10</sub> (38.1 µg/m<sup>3</sup>), PM<sub>2.5</sub> (26.8 µg/m<sup>3</sup>), BaP (PM<sub>10</sub>) (5.4 µg/m<sup>3</sup>), C<sub>6</sub>H<sub>6</sub> (1.4 µg/m<sup>3</sup>) were recorded in the North Zone of Silesia. The lowest annual NO<sub>2</sub> value (20 µg/m<sup>3</sup>) was in the South Zone of Silesia.

There was noted a difference between the distribution of incidence rates and the place of residence. In areas with the highest average annual PM<sub>10</sub>, PM<sub>2.5</sub>, BaP, C<sub>6</sub>H<sub>6</sub> the highest incidence ratios for CNST were reported.

**Keywords:** children, CNS tumors, air pollution

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## **SESSION OF RADIOLOGY, RADIODIAGNOSTICS AND NUCLEAR MEDICINE**

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## **The role of Radioiodine therapy in the Treatment of subclinical hyperthyroidism and oxidant/antioxidant balance.**

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Work's tutor: dr n.med. Saeid Abdelrazek

**INTRODUCTION** Oxidative stress plays an important role in hyperthyroidism induced – tissue damage.

**THE AIM** To determine whether radioiodine therapy (RIT) has benefit effect on the oxidant and antioxidant status in subclinical hyperthyroidism.

**METHODS AND MATERIALS** Our study included 37 patients with untreated subclinical hyperthyroidism, (31 female, 6 male), aged 28–64 years; 15 patients with multinodular goitre, and 21 patients with solitary autonomous nodule. 14 normal adult volunteers as control group. Before the treatment all the patients has normal levels of serum fT3, fT4, low levels of serum TSH (idism caused a significant increase in MDA level (Pvities (P GSH level (Pd to euthyroid controls subject. Achievement of euthyroidism after 6 months of radioiodine administration resulted in a significant decrease of MDA, significant increase of GSH and non significant increase in GPx activities.

**CONCLUSION** Our results confirm the imbalance of the antioxidant/oxidant status in subclinical hyperthyroidism.

**Keywords:** radioiodine therapy, subclinical hyperthyroidism, oxidant

## Therapy for non-toxic multinodular goiter: radioiodine therapy as attractive alternative to surgery

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

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

**METHODS AND MATERIALS** During the last 4 years we treated 120 patients, aged 22–72 years; 89% female and 11% male; initial RAIU after 24 h was ranged between 22 and 44%, and thyroid volume ranged between 48 and 160 ml. Qualifications of these patients were based on normal levels of serum TSH, fT3, and fT4, and characteristic appearance on thyroid scans and ultrasound. Some of the patients complained of compressive symptoms (65 patients). Malignant changes were excluded in all nodules by fine needle aspiration biopsy. The therapeutic radioactivity was calculated by the use of Marinelli's formula and ranged between 400 and 800 MBq. The absorbed dose (Gy) ranged between 180 and 300, and was proportional to thyroid volume. Follow up control was done every 6 weeks.

**RESULTS** After 12 months of radioiodine therapy a mean thyroid volume reduction of 45% was achieved in all the patients, euthyroidism persist in 93% of patients, and hypothyroidism develop in 7% of patients. In all the patients the compressive symptoms relieved and exercise tolerance improved.

**CONCLUSIONS** Radioiodine is non-invasive, safe and cost effective method of therapy for reduction of goitre and should be used as first choice in every patient with non-toxic nodular goitre (>40 ml).

**Keywords:** non-toxic, radioiodine, goiter

## **Radiological presentation of PRES in children.**

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**INTRODUCTION AND THE AIM** To determine radiological presentation of PRES in pediatric patients treated due to oncological diseases, and evaluate the utility of MRI and CT in diagnosis of PRES.

**METHODS** We evaluated clinical records and MRI and CT scans of 7 pediatric patients treated in John Paul II Upper Silesian Child Health Centre. The clinical records were analyzed for the age, sex, clinical symptoms, underlying etiology, blood pressure numbers and circumstances at PRES presentation. MRI images were evaluated for localization and nature of the lesions, features of edema, contrast enhancement and DWI features.

**RESULTS** The most commonly involved localizations were occipital lobes (7/7), frontal lobes (6/7) and parietal lobes (4/7). Typical lesions of high signal intensity on T2-weighted images and FLAIR were present in all patients. Two patients showed restricted diffusion on DWI and features of edema. Focal enhancement after contrast infusion was present in 2/7 patients. CT scan, performed initially in 4/7 patients, wasn't diagnostic of PRES. Follow-up imaging performed in 5 patients confirmed reversibility of the syndrome. The most common indications for radiological imaging were neurological symptoms (seizures 4/7, headaches, altered mental status. Hypertension (a risk factor for PRES) occurred in 5/7 patients.

**CONCLUSIONS** Analysis of clinical and radiological data shows that MRI is the gold standard for PRES diagnosis. Observed MR imaging findings are consistent with the literature. CT scan, which is often the initial imaging test in patients with neurological symptoms, may not be sufficient to make the diagnosis.

**Keywords:** PRES, Posterior reversible encephalopathy syndrome, MRI, CT

## **Efficacy of invasive treatment in patients suffering from ruptured intracranial aneurysm.**

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**INTRODUCTION** Intracranial aneurysms most often are located within the blood vessels forming the anterior cerebral circulation. If they rupture, they cause subarachnoid hemorrhage. Currently, there are two different types of invasive treatment being conducted – coiling and clipping. The choice of the appropriate method depends on the location and morphology of an aneurysm, and the patient's condition.

**THE AIM** The aim of our work was to determine the performed treatment influence on the final clinical outcome and to define the possibility of complications occurrence.

**METHODS&MATERIALS** From the 471 patients with aneurysms who underwent Digital Subtraction Angiography(DSA) and were admitted to our Clinic between years 2008-2014 either for endovascular or neurosurgical treatment, we have selected the group of 138 patients diagnosed with ruptured intracranial aneurysms. In the retrospective study conducted by us 64.5% of the test group were women and 35.5% men. The average age was 51. Each patient's medical record was analyzed and observed aneurysms were measured on the basis of radiological images obtained in the DSA.

**RESULTS** 55.4% of the cases were treated using interventional radiology techniques. 45.5% of them returned for a follow-up and in 81% of the cases this particular treatment method was confirmed as effective using Montreal scale. The follow-up done after surgical treatment was performed in 33.9% of the cases and in 81.3% of them radiological efficacy was reported

**CONCLUSIONS** On the basis of our analysis, both methods were recognized as equally effective. The choice of the procedure should depend on morphology of an aneurysm and the patient's clinical state.

**Keywords:** ruptured, aneurysm, coiling, clipping

## **Comparison of results of myocardial perfusion scintigraphy and cardiac stress test in patients with suspicion or diagnosed coronary artery disease.**

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**INTRODUCTION** Myocardial perfusion scintigraphy (MPS) is one of the most important and commonly performed non-invasive cardiac imaging test. Stress/Rest MPS is a type of test imaging a heart before and after exercise to determine the effect of stress on the flow of blood through coronary arteries. The major indication for MPS is diagnosis of coronary artery disease (CAD). Stress electrocardiography (ECG) is simple and widely used procedure in most patients with suspicion of CAD.

**THE AIM** The aim of study was to compare the results of MPS and stress ECG in patients with suspicion or diagnosed CAD.

**METHODS AND MATERIALS** We enrolled 360 patients referred with suspicion or diagnosed CAD. 2-day stress/rest MPS with injection of 740 MBq of MIBI-Tc-99m and stress ECG were done in all patients. We considered only these examinations when patient achieved at least 85% of age-predicted maximum heart rate.

**RESULTS** The result of stress ECG was positive in 24,2%, doubtful in 23,6% and negative in 52,2% cases. In MPS we assessed reversibility of a perfusion. The result of MPS was correct in 90%, ambiguous in 4,7% and incorrect in 5,3% patients. Only in 9,3% patients with positive and doubtful stress ECG, the result of MPS was ambiguous or incorrect.

**CONCLUSIONS** MPS is helpful in verifying the need for further invasive diagnosis. The correct result of MPS will avoid great amount of coronarographies. There was no correlation between stress ECG and MPS. Big amount of correct MPS results in our study enforce the necessity of further investigation of stress only protocols. A significant reduction in radiation exposure, costs and waiting time for exam can be achieved with such an approach. Thereby physicians will consider more frequent use of MPS.

**Keywords:** myocardial perfusion scintigraphy, coronary artery disease, cardiac stress test

## **The many faces of fetal MRI: Imaging features and differential diagnosis of selected anomalies of the central nervous system**

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**INTRODUCTION** Nowadays, the ever-advancing field of fetal imaging puts many diagnostic options at the physician's disposal. Fetal magnetic resonance (MR) often allows a more precise assessment of the central nervous system (CNS) compared to obstetric ultrasound. However, as any other imaging modality it exhibits certain limitations.

**THE AIM** The purpose of our study was to identify possible diagnostic pitfalls and difficulties encountered by the radiologist during the assessment of selected anomalies of the CNS in fetal MR scans.

**MATERIALS AND METHODS** We selected 43 fetal MR scans performed in MCD Voxel in the Independent Public Hospital no. 1 in Zabrze on a 1.5T General Electric HDx magnetic resonance platform. Each case was reviewed with the help of a radiologist and differential diagnosis options were searched for in available literature. Subsequently, we searched the database again for records corresponding to these differential diagnoses and compared their appearance.

**RESULTS** In fetal MR scans, the main difficulties the radiologist must face are movement artifacts, poor visualization of bone structures and calcifications and lack of contrast enhancement. Myelomeningocele should be differentiated with sacrococcygeal teratomas. Corpus callosum agenesis may be similar in appearance to intrahemispheric arachnoid cysts. CNS cysts need to be differentiated from CNS bleeding, vascular malformations, hydrocephaly or cystic tumors.

**CONCLUSIONS** MRI allows a precise assessment of the fetal CNS. As an imaging modality, it requires however a significant level of expertise due to a broad spectrum of possible differential diagnoses and frequently encountered technical difficulties.

**Keywords:** MRI, fetal MRI, prenatal imaging

## Contrast-induced nephropathy in patients after embolization of intracranial aneurysms

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**INTRODUCTION** Contrast-induced nephropathy (CIN) is an acute kidney injury which may develop in patients undergoing interventional radiology procedures. There are several risk factors and preventive measures that should be taken into account in data analysis.

**THE AIM** To investigate the frequency of CIN in patients who underwent embolization of aneurysms, its baseline risk factors and preventive strategies used.

**METHODS AND MATERIAL** From 01.2015 to 11.2016, 162 subjects (55 M, 125 F/ aged  $58 \pm 12$  y.) underwent 180 procedures. Perioperative variables were retrieved from medical records (n=56 patients).  $\Delta\text{SCr}$  [(postSCr-preSCr)/preSCr] and  $\Delta\text{SCCr}$  [(preSCCr-postSCCr)/postSCCr] were the outcomes.

**RESULTS** There were 1%, 32%, 52% and 15% patients in ASA 1,2,3 and 4 class. Median  $\Delta\text{SCr}$  and  $\Delta\text{SCCr}$  were -0,025 (IQR -0,115; 0,065) and -0,02 (IQR -0,11; 0,075), respectively. One patient developed CIN defined as increase in  $\Delta\text{SCCr} > 25\%$ . Mean contrast dose was  $2.32 \pm 0.76$  ml/kg. Mean IV fluid dose was  $44 \pm 16$  ml/kg. Median diuresis was 16 (IQR 11;27) ml/kg. Vit.C received 4 patients. Hypertension ( $p=0.2/p=0.1$ ), diabetes ( $p=0.4/p=0.4$ ), previous NSAID treatment ( $p=0.3/p=0.9$ ), contrast exposure ( $p=0.3/p=0.3$ ) had no impact on  $\Delta\text{SCr}$  and  $\Delta\text{SCCr}$ .  $\Delta\text{SCr}$  and  $\Delta\text{SCCr}$  did not differ in consecutive ASA classes (both  $p=0.6$ ). Treatment with vit.C had no effect on  $\Delta\text{SCr}$  and  $\Delta\text{SCCr}$  (both  $p=0.2$ ). There were correlations between contrast dose and treatment with fluids ( $R=0.4;p=0.01$ ) and subsequent diuresis ( $R=0.6;p<0.01$ ) There was no associations between fluid dose and  $\Delta\text{SCr}/\Delta\text{SCCr}$  (both  $R=-0.1;p=0.6$ )

**CONCLUSIONS** CIN is an infrequent complication following embolization, primarily due effective prophylactic adequate fluid resuscitation.

**Keywords:** Contrast-induced nephropathy, embolization, intracranial aneurysm

## **Very small intracranial aneurysms – efficacy of endovascular treatment**

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**INTRODUCTION** Technological progress of noninvasive neuroimaging allows investigation and treatment of smaller pathologies. Thus very small intracranial aneurysms [VSIA] can be extracted from a group of intracranial aneurysms. As aneurysms can lead to subarachnoid haemorrhage [SAH], it is crucial to diagnose them before they burst to minimise neurological complications and death.

**THE AIM** Retrospective study was carried out to assess clinical condition of patients with VSIA and to evaluate methods of treatment, its outcome and complications.

**METHODS AND MATERIAL** From the group of 533 patients with intracranial aneurysms, 36 cases of VSIA were selected. Inclusion criteria were any dimension of the neck or the sack nts arrived at follow up examination with Montreal Scale Score 1 observed in 20 of them.

**CONCLUSIONS** We have found radiological and clinical outcomes of endovascular treatment of VSIA to be effective, with no late complications nor death. The recovery was good with fair success rate.

**Keywords:** very small intracranial aneurysms, aneurysm, embolisation



## **Evaluation of the effectiveness of embolization of Intracranial aneurysms using hydrogel and platinum spirals**

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Embolisation of aneurysm involves platinum spirals insertion through the catheter in order to close the light (lumen?) of an aneurysm. It may be complementary to neurosurgery or independent therapeutic method. Usually, p with aneurysms in the area of vertebral-basalis circulation and aneurysms located near important functional structures are qualified for this procedure. Retrospective analysis included 102 patients treated for intracranial aneurysm in 2010-2016. The volume/size, location of aneurysms and the effectiveness of their embolization were studied. Frequency of appearance have been assesed due to sex and age. Women were definitely dominant (69,8%). Most common localization of aneurysms in this study was arteria communicans anterior (27,2%). Overall effectiveness of embolization was 62,7%. The outcome depends on the size of aneurysms, as volume of aneurysm grow, efficiency decreases but also depends on sex and localization of aneurysms.

**Keywords: Embolization, Intracranial aneurysms, platinum spirals, hydrogel spirals**

INTERNATIONAL MEDICAL CONGRESS OF SILESIA

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF CASE REPORTS INTERVENTIONAL I**

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## **Treating Nephrolithiasis using tubeless Percutaneous Nephrolithotomy - case study**

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**INTRODUCTION:** Nephrolithiasis is the condition in which kidney stones occur in the urinary tract as a result of the precipitation of chemicals when their concentration diverts the solubility threshold. Percutaneous nephrolithotomy (PCNL) is a modern method that allows simultaneous breaking up and removal of large (> 20 mm) renal calculi located in the pelvicalyceal system and upper ureter during one operation. In certain cases the PCNL can be safely performed without nephrostomy.

**AIM OF THE STUDY:** Retrospective case analysis of a 51-year-old patient qualified for a tubeless PCNL.

**MATERIAL AND METHOD:** A 51-year-old patient with lumbar pain on the right side radiating to testicles, which have been occurring for one and a half years, was admitted to the Urological Department of SK1 in Zabrze for surgical treatment. **RESULTS:** Patient admitted on schedule to SK1 Urology Unit in Zabrze. After the admission, a CT of the abdomen was made which revealed the calculi of the right kidney. The patient was qualified for a tubeless PCNL treatment that was performed without complications. Discharged from hospital after two days with recommendations in a good general condition.

**CONCLUSIONS:** PCNL compared to traditional operative techniques represents a huge advance. In addition, the lack of nephrostomic drain can significantly shorten the patient's stay in hospital and the recovery time.

**Keywords:** nephrolithiasis; PCNL; tubeless

## **A plentiful surgical history of the boy with lumbosacral meningomyelocele.**

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**Introduction:**Children with meningomyelocele require long term, specialist care with various consultants. Many patients are treated surgically to correct the functional disorders.

**Case report:**A 9-year-old Konrad is a patient of the Department of Pediatric Surgery since the neonatal period. The patient underwent a neural tube defect closure and a ventriculoperitoneal shunt insertion. At the age of 5 a ureterocystoplasty with nephrectomy was done and a Mitrofanoff fistula was performed for clean intermittent catheterization of the bladder. The stoma was made with the Macedo – Malone approach from an ascending colon flap to irrigate the large intestine due to it's functional disorders. The postoperative period was uncomplicated. The patient eliminated the stool on the 2nd day and feeding and rehydrating commenced. Konrad's general state worsened on the 4th day. Ascites, circulatory and respiratory failure and developing septic shock were observed. Intestinal perforation was suspected. During a mini-laparotomy a liquid content was sucked out and a drain was left. There was no improvement. During a formal laparotomy, a perforation of the stomach was found and closed. Enterococcus spp. was cultured in the CSF and the peritoneal fluid. Due to neurological deterioration a ventriculoperitoneal drainage was replaced with the external one and after the CSF sterilization a ventriculoatrial one was set up. The postoperative period was uncomplicated and Konrad was discharged in a good condition.

**Conclusions:**Stress ulcer was a reason of the gastric perforation. Every child with a neural tube defect treated surgically, should take stress ulcer preventive drugs in the preoperative period.

**Keywords:** meningomyelocele, gastric perforation, CNS infection

## **Lymphorrhoea – diagnostic and treatment based on examples of two patients**

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**INTRODUCTION** Lymphorrhoea is an accumulation of lymph in pleural cavity which is the result of lesion of thoracic duct(TD). Its common reasons are: cancer of the chest, trauma (especially intraoperative injuries), tuberculosis, venous thrombosis. THE AIM Analysis of two patients with lymphorrhoea.

**METHODS & MATERIALS** Retrospective analysis of the medical history of 2 patients treated for lymphorrhoea. **CASE STUDY 1.** The patient, aged 34, with a diagnosis of interstitial lung disease and tuberculosis after treatment, transferred from the Department of Pulmonology to Thoracic Surgery Clinic to perform Video-assisted thoracoscopic surgery (VATS) with partial dissection of the left lung for histopathology examination. Few months later, admitted again because of pleural effusion. During the month of hospitalization a large amount of the lymph (calculated in liters) was obtained. After double VATS, TD ligation and assuming of the Heimlich valve, patient was discharged home. **2.** The patient, aged 34, admitted in intervention mode with the diagnosis of odontogenic mediastinal abscess and descending mediastinitis. Abscesses were evacuated and drainage to mediastinum and pleural cavity were established. 3 days after the operation the drainage began to receive large amounts of the lymph. During 1.5 months of hospitalization TD ligation was attempted 3 times. As a result of the last attempt lymphorrhoea has been completely eliminated.

**CONCLUSIONS** Lymphorrhoea can be a serious complication of many pathological conditions occurring in the chest and sometimes it reaches enormous extent. Ligation of the thoracic duct in case of the abundant lymphorrhoea may sometimes be difficult, but effective.

**Keywords:** lymphorrhoea, video-assisted thoracoscopic surgery, thoracic duct ligation

**PSA >1000 ng/ml – what if not a cancer?**

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Introduction: Prostate cancer accounts for 13% of all malignant cancers affecting men in Poland, making it the second most frequently occurred cancer. Basic diagnostic procedure is PSA test.

Aim: Analysis of patient with elevated 250 times PSA level. Materials and methods: Retrospective analysis of the medical history of 70-years old patient treated because of prostate cancer.

Case study: A 70-years old patient after TURBT and BCG therapy (2013) in another hospital was admitted to the Independent Public Clinical Hospital No. 1 in Zabrze in November 2014. Because of the suspicion of disseminated prostate cancer on the basis of the clinical picture and severe pain in the spine. In an outpatient PSA test > 1000ng / ml. Two weeks before admission to hospital, flutamide therapy was used. During admission PSA > 100 ng / ml. After prostate biopsy no tumors were found, measurement of prostate gland was 45 x 39 x 53mm. Because of the high risk of surgery, cervical biopsy was discontinued and started radiotherapy. The second hospitalization took place in March 2015. The purpose of treating was fistula of left testicle, which led to perform bilateral orchidectomy. Histopathological examination revealed that all the aforementioned ailments were caused by a disease rarely found in urology- tuberculosis. In 2016 PSA level increased again >30ng/ml, and histopathological findings confirmed Gleason 6 (3 + 3) prostate adenocarcinoma. Further treatment was continued with Cyberknife radiotherapy.

Conclusions: PSA is a good marker of pathological changes in the prostate, but elevation of this antigen may indicate other than urological reason.

**Keywords: PSA, prostate cancer, tuberculosis**

## **Gastric melanoma as a primary tumor: a case report.**

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**Introduction:** Occurrence of the melanoma outside the skin is estimated at less than 1:100,000 cases per year. Stomach placement is estimated to be about 1% of all extracutaneous melanoma cases. In our work we present a case of a 65-year-old patient diagnosed with primary gastric malignant melanoma.

**The aim:** To present the case of a patient with primary gastric malignant melanoma.

**Materials and Methods:** Retrospective analysis of medical records. **Case report:** A 65-year-old woman was admitted to hospital for diagnosis of the cause of her weight loss and weakness. The patient was diagnosed with anemia. Additional imaging and endoscopic investigations were performed, identifying lesions of the gastrointestinal tract. Mesothelioma malignum was diagnosed on the basis of a histopathological examination of the endoscopic sections. Abdominal CT scan revealed a tumor located in the gastric body. As additional IHC assays were required, endoscopic re-examination and biopsy were performed. Results of the HP examination were: Melanoma Malignum, Melan A(+), CK(-). The patient was qualified for surgical treatment. Complete gastric resection with reconstruction of gastrointestinal continuity with Roux-en-Y loop was performed. The repeated IHC assay confirmed the preliminary diagnosis. After exclusion of pre-existing melanoma, the primary gastric melanoma was identified.

**Conclusions:** Malignant melanoma as the primary gastric tumor is extremely rare. The treatment requires radical surgery within the shortest time possible following the diagnosis. Endoscopic diagnosis of patients with stomach tumors in the absence of a clear result requires further investigations.

**Keywords:** malignant melanoma, gastric tumor



## **Plasma Technology in gynecology: a case of patient with widespread endometriosis surgically treated with PlasmaJest**

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Endometriosis is a condition in which the endometrium grows outside of the uterus. It may cause severe pain of lower back or abdomen or painful cramps during menstrual periods. It is also one of the major risk factors of infertility. This disease is problematic both in diagnostics and in proper treatment. Untreated endometriosis may result in complications like penetration to skin layers or overgrowth of abdominal layers. We present a case of 41-years old patient admitted to the Center of Woman's and Child's Health in Zabrze in order to undergo a surgical treatment of widespread endometriosis located in the abdominal layers from rectus abdominis muscle's aponeurosis to the scar after caesarian section. The tumor caused boring and burning pain (10 points in the VAS scale). The endometrioses was surgically treated with the Plasma Technology. The time of hospitalization was 5 days. During the period of 6 months observation, the patient didn't have any pain complaints and the re-surgery wasn't necessary. This case report aims to present the advantages of the use of plasma technology in the surgical treatment of endometriosis. PlasmaJet is one of the most innovative technologies used in gynaecology. This system offers surgeons to perform no-touch, safe and atraumatic surgery. Argon plasma is a hope for many patients, who often after many laparotomies seek for chance of life without pain.

**Keywords: endometriosis, plasma technology, argon plasma**

## **Course of orthopedic treatment in a 40-year-old miner after a multi-organ trauma caused by rock crushing - case report**

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Introduction: Miner's work involves many underground dangers. Unfortunately, during the shifts, they suffer from various accidents. In most cases they are multi-organ injuries and require orthopedic supplies. Aim of the study: Case study of multi-organ injury patient with multiple pelvic fracture, following rupture of pubic symphysis treated with minimally invasive surgical technique using sacral bar technique. Materials and Methods: Retrospective Analysis of Medical Records. Case study: A 40-year-old miner was injured in an accident by rock crushing, weighing several tonnes. After securing the basic vital signs, he was transported by the Specialist Medical Rescue Team to the Trauma Center in Sosnowiec by helicopter. As a result of the accident the following occurred: bilateral fracture of the sacrum and pubic bone, fracture of the ischium, rupture of bladder and right urethra, left lateral fracture of L1-3 vertebrae, right collarbone, right forearm and damage of liver. Directly from the Rescue Hospital, the patient was transported to an operating unit where help was provided by general surgeons and urologists. The first stage of orthopedic treatment was stabilization of pubic bone fractures using retrograde cannulated screws. The pubic symphysis was also stabilized using AO plates and screws. The next step was the stabilization of sacral bone fracture. On the third day after surgery, the patient started to learn how to walk with walker. Conclusions: Junction of multiple pelvic fractures using the sacral bar technique reduces the risk of intraoperative complications, allows to quick rehabilitation, and significantly reduces hospitalization time.

**Keywords: Sacral bar, pubic fracture**

## Polytrauma as a result of a traffic accident. Case study

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Introduction(In 2016 motorbike accidents wounded 2067 people accounting about 10% of all traffic accidents. Polytrauma is the most common result of such accidents) The aim(Case presentation of polytraumatic patient) Materials and Methods(Retrospective Analysis of Medical Records) Case study(The patient is a 30-year-old motorcycle passenger who suffered a multi-organ traumatic injury. The patient was referred to the Trauma Center of the Provincial Hospital No. 5 in Sosnowiec. Samples for laboratory tests were collected and mechanical cleaning of wounds was performed. As a matter of urgency, she was transported to operating theatre of the Orthopaedic Clinic. On the first postoperative day the patient suffered a haemorrhagic shock. Hence the patient was provided with blood products until optimum health condition was achieved. Improved general condition allowed the patient for an anaesthetic qualification for planned spinal stabilization .After the surgery a plastic surgeon was consulted and the culture was collected. Investigation confirmed an infection. Antibiotic therapy was implemented. A surgical cleansing of the left hip area was performed with the assumption of a vacuum dressing. After traumatic injury reduction another vacuum therapy was implemented with the use of platelet-rich plasma. Post-hospitalization rehabilitation exercises were recommended along with high protein diet and orthopaedic and plastic surgery controls were advised) Conclusions(Traumatology centres play an important role here, thanks to the presence of specialists in many field, in such units, it is possible to supply both fractures, spinal injuries and extensive traumatic wounds as well as provide the patient with a proper rehabilitation)

**Keywords: polytrauma, pubic fracture**

## **Negative pressure wound therapy in the treatment of lesions developed in the course of meningococcal sepsis - a case report**

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The paper describes the process and effects of wounds therapy resulting from meningococcal sepsis in 2 month old boy. The patient was diagnosed with severe condition, suffered from acute kidney injury, septic shock and respiratory failure. He was treated in children's intensive care unit. During the course of the treatment extensive necrosis of the limbs and abdominal skin manifested occurred, covering 43% of the total body surface area. NPWT was applied to the lower limbs' surfaces which wounds accounted for 21% of the total body surface area. The use of vacuum increased the effectiveness of the treatment, reduced the area of ischemia and allowed for successful preparation of a substrate for skin grafts positioning. Due to extensive necrosis of skin, subcutaneous layer and peripheral parts of the limbs, amputation of the right hand and partial amputation of fingers II-V of the left hand was necessary. After 63 days of hospitalization the patient was discharged home in good general condition. Remaining wounds in the phase of granulation tissue formation covered approximately 2% of TBSA.

**Keywords: NPWT - Negative Pressure Wound Therapy, meningococcal sepsis**

## Joint track measurement in patients with mandible condyle fracture treated with conservative and surgical methods

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**Introduction:** Mandible condyle fracture is common injury in facial traumatology. It can be treated with conservative and surgical methods.

**The aim:** The aim of the study is to measure joint track in saggital plane in patients with mandible condyle fracture treated conservatively and surgically.

**Materials & methods:** Material consist of 90 patients with isolated mandible condyle fracture treated in Maxillo-Facial Surgery Clinic at Medical University of Silesia. Patients are divided into six groups - 20 treated conservatively, 9 treated surgically with intra-articular anastomosis, 13 treated surgically with extra-articular anastomosis, 19 treated with condylectomy, 9 treated with condylectomy and mandible ramus osteotomy, 20 patients without mandible condyle trauma - control group. Joint track was measured with Cadiax Compact 2 six months after treatment.

**Results and conclusion:** Average joint track in control group was 12,71. At patients treated conservatively joint track was average 10,54. Patients treated surgically with extra-articular anastomosis - 9,93, with intra-articular anastomosis - 9,93, with condylectomy - 4,40, with condylectomy and ramus osteotomy - 4,59. Relative to control group joint track was 53% smaller in patients treated surgically and 17% smaller in patients treated conservatively.

**Keywords:** CADIAX, joint track, manfible condyle fracture, surgical and conserevative mandible condyle fracture treatment

## **Radical vulvectomy with bilateral lymphadenectomy- treatment and postoperative therapy with the use of vacuum-assisted closure therapy.**

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Vulvar cancer is a relatively rare malignancy, but its frequency has increased in the past decade. It constitutes 3-8% of all gynecological tumors. Mean age is 70-80 years and in 90% the pathological examination reveals squamous cell carcinoma. The first choice treatment is radical vulvectomy, which is often complicated with complex wound failure (CWF). One of the successful methods used in wound healing is vacuum-assisted closure (VAC). This work aims to present benefits out coming from VAC. We present a case of 75-years old woman diagnosed with vulvar cancer. The patient underwent radical vulvectomy with bilateral lymphadenectomy. After 10 days, CWF was observed. The woman was treated with VAC. The wound state alleviated, the total time of healing was reduced, the patient remained in the good psychophysical state. Despite many advanced surgery treatments, complex wound failure is a frequent postoperative complication. The use of vacuum-assisted drainage enables to remove blood or serous fluid from a wound or operation site. It is successful and innovative technique. It has been used increasingly over the past decade for acute and chronic wounds. It provides stimulation of granulation tissue and neovascularization; evacuation of excessive putrid fluid and it decreases bacterial colonization. Through this mechanisms, the total time of wound healing, hospitalization and nursing work may be reduced.

**Keywords: vulvar cancer, vacuum-assisted closure, complex wound failure, vulvectomy**

## Diagnostic difficulties in sphenoid sinus tumor- case report

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**INTRODUCTION:** Tumors of paranasal sinuses account for 0.2 to 0.8% of all malignancies and for about 3% of head and neck cancers. The localisation in the nasal cavity and paranasal sinuses is extremely important due to the proximity of structures such as orbits, cranial nerves and vital blood vessels. For this reason precise diagnosis is crucial, yet it might be very difficult. **THE AIM:** The aim of this study was to present difficulties in final diagnosis of a case of chondrosarcoma originating from the left sphenoid sinus. **METHODS & MATERIALS:** The authors present a case of a 65-year-old female patient referred to Department of Laryngology and ENT Oncology, Regional Hospital No.5 in Sosnowiec in March 2015 with suspicion of fungal chronic rhinosinusitis of sphenoid sinus. **RESULTS:** Preliminary radiological evaluation suggested fungal process in the sphenoid sinus and FESS (functional endonasal sinus surgery) procedure was performed. The intraoperative image showed a hard tumor with a dominant bone component. Patomorphological examination revealed osteochondroma. Therefore meticulous follow-up visits were planned. Shortly, limited visual field occurred due to optic nerve infiltration. The patient underwent radical reoperation. An inconsistency between chordoma and chondrosarcoma was observed in histopathological findings. Finally, immunohistochemic examination revealed chondrosarcoma. The patient is currently undergoing proton therapy. **CONCLUSIONS:** A definitive diagnosis is mainly based on the result of a meticulous histopathological examination and it is a key to the right therapeutic decision. The authors also emphasize the role of immunohistochemistry.

**Keywords:** chondrosarcoma, chordoma, sphenoid sinus tumor

## **Spontaneous pneumomediastium of unknown etiology in children- case report.**

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**INTRODUCTION:** Pneumomediastinum is defined as pathological presence of air in the mediastinum. Isolated, spontaneous pneumomediastinum is a benign condition, but its presence should always alert the clinician to look for its cause. The most common cause of pneumomediastinum is head and neck injuries within the mediastinal itself, as well as abdominal cavity and pulmonary parenchyma. Relatively frequent causes of injury are head and neck procedures, mediastinoscopy, punch biopsy of bridge bone marrow, or renal biopsy. Rare causes include caisson disease, seizures, metabolic acidosis in diabetes, anorexia nervosa, abuse of psycho-stimulants and intoxicants. A relatively common cause of pneumomediastinum is damage to the lung parenchyma caused by barotrauma.

**CASE DESCRIPTION:** Two cases of pneumomediastium in pediatric patients with no history of pulmonary disease, traumatic backbone of the condition, perforation in the gastrointestinal tract and respiratory tract, that was suspected to be related with abuse of psycho-stimulants – Designer Drugs.

**CONCLUSION:** Pneumomediastium is a rare but potentially life-threatening pathological condition in children. In the case of children and adolescents, in addition to the obvious mechanisms that may lead to pneumomediastium, consideration should be given to the possibility of this condition occurrence after ingestion of psychoactive substances, including designer drugs, whose detection in the body still causes diagnostic problems.

**Keywords:** Pneumomediastinum, drugs, designer-drugs.



## **Single lung transplantation in the oldest patient in Poland with preventative intrabronchial valves placement**

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**INTRODUCTION** End stage Chronic Obstructive Pulmonary Disease (COPD) is the most common indication to lung transplantation. According to The International Society for Heart & Lung Transplantation report every third lung transplantation is conducted due to that reason.

**CASE REPORT** A 62-year-old-man with the 20-year-history of tobacco smoking was diagnosed as COPD – the patient presented the most common symptoms and spirometry confirmed the diagnosis. After a year due to progression of respiratory failure the home oxygen therapy was implemented. In 2012 the patient was referred to Silesian Center for Heart Diseases in order to qualification to lung transplantation (LTx). Functional tests (spirometry, DLCO, bodyplethysmography, 6MWT) and no contraindications permitted to sign the patient on the waiting list for transplantation. In 2016 orthotopic transplantation of the left lung was performed. Because of single lung transplantation there was a risk of the native lung hyperinflation, which can lead to mediastinum shift and the compression of the graft. This can induce the deterioration of allograft function and haemodynamic instability. For this reason implantation of the intrabronchial valves (IBV) in the native lung right after the LTx was performed. Patient was extubated in the second day. Straightway pulmonary rehabilitation and physical therapy was implemented. After 3 months patient was discharged from hospital.

**CONCLUSIONS** Lung transplantation is a standard treatment method in the case of the end stage COPD. In the well grounded cases patients' age above 65 yo is not a contraindication to LTx. IBV placement right after LTx is an effective method to counteract NLH supervention.

**Keywords:** COPD, lung transplantation, intrabronchial valves

## **Extracorporeal transmembrane oxygenation (ECMO) for the treatment of acute respiratory failure in AH1N1.**

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Work's tutor: Prof. dr hab. n. med. Ewa Kucewicz-Czech

**Introduction:** Influenza AH1N1 (Pandemic Flu) is more frequently associated with complications of acute respiratory failure than seasonal flu. In addition, it more often requires use of atypical methods to maintain normal blood oxygenation. It is also characterized by higher mortality (7%), for patients admitted to Intensive Care Unit (ICU) the mortality rate can reach 14-25%.

**Case report:** The man 35 years old was admitted to the ICU from District Hospital because of severe respiratory failure in influenza AH1N1 with hypoxemia which accompanied by generalized subcutaneous emphysema caused by tracheal perforation during intubation. Venous-vein ECMO was used to sustain life. Bronchoscopy demonstrated the perforation of the posterior wall of the trachea with a length of 4.5 cm. The stent was trampled. ECMO therapy was ended after 18 days as a result of improved pulmonary tissue susceptibility. Tracheostomy was used due to the prolonged mechanical ventilation of the lungs.. Mechanical ventilation was ended after 32 days. During the hospitalization the patient had a syndrome of delirium. This required renal replacement therapy, transfusion of blood products and cardiovascular support with Levonor infusion.

**Conclusions:** As a result of highly specialized procedures, therapy and properly performed unconventional blood oxygenation techniques, the patient in a stable general condition was transferred to the general hospital.

**Keywords:** AH1N1, ECMO, acute respiratory failure, Intensive Care Unit

## First succesful Lung Transplantation for Williams-Campbell Syndrome in Poland

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**INTRODUCTION** Williams-Campbell syndrome is a disorder characterized by deficiency of subsegmental bronchial cartilage and development of bronchiectasis that progress to respiratory failure and death. Since the disease may involve the cartilage of the large airways, the role of lung transplantation is controversial and there have been only few attempts performed. Due to postoperative complications, transplantation has not been recommended for this disease so far. We report a case of the first successful lung transplantation in Poland in a patient with end-stage lung disease Williams-Campbell Syndrome.

**CASE PRESENTATION** A 36-year-old man with severe breathlessness and history of recurrent episodes of productive cough with low grade fever, for which reason he was admitted in hospital and treated numerous times. Symptoms included cough, respiratory insufficiency and lower limbs oedemas. Chest roentgenogram revealed spotted disseminated densities in both lungs and multiple areas of bronchiectasis. Echocardiography: dilated right ventricle with deep hypokinesis and diminished contractile function of left ventricle. The results indicated hemodynamically significant pulmonary hypertension and obstructive lung disease with extensive bullous disease. Due to inefficacy of applied therapy he was qualified for a lung transplantation, which resulted to be successful and improved the patient's life quality.

**CONCLUSION:** Although the lung transplantation is not recommended in Williams-Campbell syndrome and there are few data available, this case proves that it should be considered in patients which do not respond to other methods of treatment. Further research needs to be performed.

**Keywords:** Williams-Campbell syndrome, lung transplantation, respiratory failure, bronchiectasis, airway collapse

## **The use of alteplase during caesarean section to treat acute pulmonary embolism complicated by sudden cardiac arrest - case report**

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**INTRODUCTION:** Pulmonary embolism is one of the main causes of death among pregnant women. Diagnosis during this period is difficult due to nonspecific symptoms and physiological increase of D-dimer. The case describes use of second-generation thrombolytic drug – alteplase for the treatment of massive pulmonary embolism during C-section.

**CASE REPORT:** A 34-year-old obese patient in the 22nd week of multiple pregnancy was admitted to the Department of Obstetrics and Perinatology, Jagiellonian University with vaginal bleeding. A USG examination revealed hematoma formation separating the placenta from the uterine wall in one of the fetuses. Due to the immaturity of pregnancy rest and observation in hospital were recommended. After 19 days of hospitalization due to clinical symptoms of placental abruption, the patient was qualified for C-section. The second extraction of the fetus was followed by sudden cardiac arrest due to massive pulmonary embolism. Successful cardiopulmonary resuscitation was performed, pressor amines, heparin bolus and alteplase were applied. Since a massive bleeding from the uterine cavity occurred, hysterectomy was performed. In the postoperative period the patient, in serious condition, was hospitalized in the ICU – she required the administration of pressor amines, broad-spectrum antibiotic and transfusion of blood products.

**CONCLUSION:** Alteplase is used in the treatment of pulmonary embolism. The drug is absolutely contraindicated in states where risk of bleeding is high e.g. surgery. The case shows the controversial decisions on the use of alteplase during the C-section complicated by pulmonary embolism was probably the only way to save the patient's life.

**Keywords:** pulmonary embolism; caesarean section; pregnancy

## From under the frozen eyelids

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Background: Unintentionally drops of body core temperature below 35°C is called accidental hypothermia. The Swiss Staging System based on clinical signs distinguished 5 degrees and can be used at the scene to describe victims. Body core temperature measurement is necessary to confirm and classify a hypothermia. According to data from Central Statistical Office of Poland hypothermia cause death 300 to 600 people annually. A person with the lowest body core temperature (12,7°C) in the history of medicine was rescued by Polish doctors using the method of Extracorporeal Membrane Oxygenation (EMCO).

Case report: 29 age patient with profound hypothermia (body core temperature 22°C) was in critical condition at the moment of admission to Emergency Department, during the cardiopulmonary resuscitation (CPR), with asystole and cardiac arrest. The EMCO was implanted during the CPR immediately in arterio-venous configuration. Circulatory system was established by applying treatment. The patient was in full-logical contact, with cardiopulmonary efficiency and right toe frostbite and right shin edema at the moment of discharges from hospital.

Conclusions: Hypothermia is direct life-threatening condition. ECMO could be effective treatment method of severe hypothermia.

**Keywords: Hypothermia, Extracorporeal Membrane Oxygenation**

## **Gamma Knife in the treatment of SUNCT syndrome – case report.**

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Short-lasting Unilateral Neuralgiform headache attacks with Conjunctival injection and Tearing (SUNCT) is an extremely rare syndrome belonging to a group of trigeminal autonomic cephalgias. It is characterized by short episodes of severe unilateral pain within the distribution of one or more branches of the trigeminal nerve accompanied by ipsilateral parasympathetic symptoms. This paper presents a case of a 60-year-old man diagnosed with refractory SUNCT Syndrome. Patient presented with 5-year history of paroxysmal, very severe unilateral pain around the eye resembling sudden shocks of electricity. Pain episodes were brief, they appeared with different frequency per day and lasted from few days up to several months. The pain was accompanied by conjunctival hyperemia, facial flushing and numbness in the orbital zone. Pharmacological treatment, trigeminal nerve blocks and alcoholization hadn't brought expected results. Based on anamnesis, detailed physical examination and MRI scans the patient was qualified for radiosurgical treatment with Gamma Knife consisting of targeting the trigeminal nerve and sphenopalatine ganglion with a total dose of 80 Gy.

**Keywords: SUNCT, gamma knife, trigeminal autonomic cephalgia**

## **Transsphenoidal surgery as the treatment of choice in corticotropine macroadenomas**

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**BACKGROUND:** Cushing's syndrome and Cushing's disease both have the same clinical manifestation in the form of hypercortisolism. The first condition is most frequently caused by the prolonged intake of exogenous glucocorticoids or less often by adrenocortical adenoma or cortex hyperplasia. The treatment of choice is transsphenoidal removal of the tumor.

**CASE REPORT:** 37 years old female patient with ACTH-dependent Cushing's syndrome due to pituitary macroadenoma, treated with transsphenoidal surgical resection. The adenoma was diagnosed in 2015 based on typical clinical signs of hypercortisolemia and MRI scan which showed the enlargement of sella with distinguished tumor, 13x14x12 mm in size. Patient had been prepared for the surgery with the use of the inhibitor of steroideogenesis, the operation was performed in Warsaw in November 2015. Histopathological examination confirmed the presence of adenoma with positive ACTH immunostaining. During postoperative assessment of pituitary-adrenal axis, based on both low ACTH serum concentrations and cortisol serum and urine levels, secondary adrenal insufficiency was diagnosed, and initial steroid replacement therapy was introduced. There is no evidence of tumor recurrence on control MRI scans.

**CONCLUSIONS:** The presented case report shows an example of successful transsphenoidal surgery of pituitary macroadenoma. After that treatment patient requires long-term follow-up and careful monitoring for signs and symptoms of recurrence. Additionally the pituitary-adrenal axis should be evaluated within 3-6 months after surgery in order to determine the necessity for lifelong steroid replacement therapy.

**Keywords:** Transsphenoidal surgery, Hypercortisolism, corticotropine macroadenomas

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## **SESSION OF CASE REPORTS INTERVENTIONAL II**



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## **Neglected ring pessary causing a vesicovaginal fistula and bladder lithiasis: a case report**

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**INTRODUCTION** Vaginal pessaries are widely used in conservative treatment of pelvic organ prolapse (POP). In female patients with POP, pessarotherapy is considered a safe, simple and effective alternative to surgery.

**THE AIM** A case study of a female patient with vesicovaginal fistula and bladder urolithiasis caused by a neglected ring pessary.

**MATERIALS AND METHODS** A 72 year old woman diagnosed with III° POP and vesicovaginal fistula was admitted to the Department of Urology. A planned procedure of pessary removal was abandoned due to the complete impaction of pessary into the anterior vaginal wall and the bladder. After admission, physical examination, cystoscopy, ultrasound examination of the urinary tract and intravenous urography were performed. Patient was qualified for operative treatment.

**RESULTS** Physical examination revealed third degree POP and rectocele. Subsequently, intravenous urography revealed visible excretion of contrast to the vagina. The exact localization of fistula could not be determined. The pessary, impacted into the anterior vaginal wall and bladder was enucleated and evacuated transvaginally, along with a bladder stone of 3cm in diameter. The patient was discharged from the Department in the 3rd postoperative day with maintained Foley catheter, which was removed 10 days after discharge. The patient reported a much better control of urinary incontinence afterwards.

**CONCLUSIONS** Despite the relative safety of pessarotherapy, it carries certain risks. Elderly women, with multiple comorbidities have difficulties in reaching an outpatient clinic and to replace the pessary periodically (by various authors every 3 or 6 months).

**Keywords:** pessarotherapy, pelvic organ prolapse, vesicovaginal fistula

## Successful pediatric kidneys transplantation into an adult recipient

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The shortage of kidney donors prompts to explore new strategies of transplantation. One is the use of pediatric donors aged up to 3 years whose kidneys can be transplanted into adult recipient en bloc. Kidneys from a 3-year-old child were transplanted to a 30-year-old man with end-stage renal failure due to glomerulonephritis. He was dialyzed for 12 years and had 1 failed KTx with consequent graftectomy. On 21.11.2009 kidneys were transplanted respectively: arterial trunk (anastomosed 2 aortic patches of donor's arteries) to side of recipient's external iliac artery and donor's vein (anastomosed end of right renal vein to side of the left one) to recipient's external iliac vein. Shortly after KTx the patient had normal renal parameters. 3 months later a critical stenosis of 1 renal artery was detected yet dilatation of it during angioplasty did not succeed due to the technical reasons. Moreover, nephrotic proteinuria appeared and renal biopsy revealed features of membranous nephropathy. Proteinuria subsided after administration of ramipril and losartan. In Doppler Ultrasound one artery is still stenotic in 90% (PSV=377 cm/s). The kidney supplied by it is 86 mm long and has parenchymal layer of 12mm. The second kidney (length-104mm, parenchymal layer-17mm) has proper PSV=83 cm/s. Despite complications, during 7 years of observation renal parameters are normal: sCr-0.86mg/dl; eGFR=100 mL/min; no proteinuria. Transplantation of pediatric kidneys into adult recipients has high efficiency – results are similar to those obtained after living donor transplant. This case report also shows that re-transplant recipients should not be disqualified due to the fears of lower efficiency.

**Keywords:** en bloc kidney transplantation; kidney transplantation; pediatric donors; expanded criteria donor; membranous nephropathy

## Description of patient with third type of LQTs

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**INTRODUCTION:** Long QT syndrome (LQTs) is a congenital and inherited or acquired heart condition causing sudden cardiac death with Torsades de Pointes. The cause of third type LQTs is mutation in the gene SCN5A, which encodes alpha subunit of the sodium channel.

**THE AIM:** The aim of this study was to describe a patient with third type of LQTs, admitted to the Children's Hospital in Cracow.

**MATERIALS AND METHODS:** 4 years and 9 months old patient of Pediatric Cardiology Ward with prolonged QTc and two episodes of cardiac arrest with the significant family history. She was diagnosed based on medical history-taking, physical examination, 12-lead ECG, Holter monitor and echocardiography.

**RESULTS:** 3 years old girl was admitted to the Intensive Care Unit due to the first episode of cardiac arrest in ventricular fibrillation. The circulation returned after amiodarone application. Holter monitor revealed prolongation of QT interval – QTc – 580ms and tall T wave. High dose of propranolol was implemented and LQTs was diagnosed. The patient was disqualified from ICD implantation because of age and too low body mass. About two years later, the patient was admitted with cardiac arrest with successful resuscitation. Initially, QTc was extremely prolonged (700ms). After implementation of lidocaine QTc was abbreviated to 550ms. The patient was qualified for implantation of ICD and mexiletine therapy. After implantation, QTc was abbreviated to 530ms.

**CONCLUSION:** Beta-blocker has remained as the most effective medication for LQTs. However, the drug failure rate of B-blocker is significantly higher in patients with LQTs type 3, so mexiletine is one of the best option of treatment in this case.

**Keywords:** LQTs, ventricular fibrillation, mexiletine, propranolol, ICD

## **Pheochromocytoma as a cause of unstable hypertension in patient after renal transplantation.**

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**INTRODUCTION** Pheochromocytoma is a rare tumor of the adrenal gland. The prevalence is approximately 0.0008%. It can be associated with hereditary syndromes. Although pheochromocytoma is benign in 90% of cases, it causes excessive production of catecholamines and symptoms arising therefrom.

**CASE REPORT** This case presents a 50-year-old male after a kidney transplant. It was preceded by a right-sided nephrectomy due to polycystic kidney disease. The patient had a history of long-term hypertension. He was investigated for artery stenosis in transplanted kidney as a cause of hypertension, a CT scan excluded this suspicion. Simultaneously, the scan accidentally revealed a change in the right adrenal gland. In further diagnostics an MRI confirmed a tumor reminiscent of pheochromocytoma, the diagnosis was made after biochemical tests. In addition, a change in the tail of the pancreas was described- image typical for a neuroendocrine tumor. The patient had genetic testing to exclude hereditary syndromes. Pathogenic variants were not found. Despite two previous laparotomies the laparoscopic adrenalectomy was performed without any complications and stabilization of blood pressure was observed. Histopathological examination confirmed pheochromocytoma.

**CONCLUSIONS** The presented case is a rare example of a patient after a kidney transplant with concomitant pheochromocytoma which was not removed during nephrectomy. Despite careful qualification of the patient prior to transplantation, diagnosis of the tumor was made five months later, which proves the need for a thorough diagnosis taking into account rare causes of hypertension with episodes of hypertensive crisis.

## **Complicated open revascularization of ruptured abdominal aortic aneurysm after ineffective endovascular treatment.**

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**INTRODUCTION** There are two methods of treatment of abdominal aortic aneurysms: classic (open) and endovascular (which requires usage of stentgraft). Both have their advantages and disadvantages, therefore method is chosen individually for every patient. Main complication of less invasive endovascular treatment is leakage into the aneurysm sac. Mostly endoleaks cease spontaneously, but in case of the further growth of the aneurysm endovascular intervention is required. In rare cases despite the re-treatment, leak can lead to aneurysm rupture. Then revascularization must be done in the classic way, which due to stentgraft presence might be extremely difficult technically.

**CASE REPORT** 72 year old man five years after endovascular treatment of abdominal aortic aneurysm, was admitted to the hospital in the state of hemorrhagic shock with suspected rupture of the aneurysm. In the medical history two unsuccessful attempts of endovascular treatment of leakage. Angio-CT has confirmed rupture of the aneurysm and has revealed large hematoma in the retroperitoneal space. Patient was immediately operated by open method. Leak turned out to be type I A and B. Aorta was clenched, and parts of the graft were removed by "syringe" method. Secondary revascularization was done using silver, vascular, aorto-bi-iliac bypass prosthesis.

**CONCLUSIONS** Endovascular treatment of abdominal aortic aneurysms requires shorter hospitalization and allows for quicker return to daily basis activities, but in comparison to the classical procedure, obligates for very careful and frequent controls after the surgery. Conversion to open treatment of ruptured aneurysm is highly difficult, but technically possible.

**Keywords:** aneurysm, endovascular treatment, classic treatment, endoleak

## Melanoma metastases in the wall of small intestine.

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**INTRODUCTION** There are about 1800 newly reported incidences of melanoma in Poland every year. Melanoma occurrence is connected with high mortality. When metastases appear in the internal organs (mostly in the brain, lungs and liver) it means that disease has reached the fourth stage and the patient's life expectancy can be counted in months. We report the case of 48-year old woman with melanoma metastases to the small intestine and mesentery.

**CASE REPORT** Primary lesion was found in 1999 in the subcutaneous tissue of the trunk. In the medical history metastases to the right axillar lymph nodes (2001, lymphadenectomy), liver (2002, partial resection), ovary (2003, hysterectomy with bilateral oophorectomy), subcutaneous tissue of the left subscapular area (2015, resection of lesion and lymphadenectomy of left axillar lymph nodes). In October 2016 PET has revealed presence of the tumor (4.8x3.5x1.5 cm) in the wall of the jejunum. Neoplasm was surgically excised, intestine was anastomosed by side to side method. Histopathological examination confirmed the initial diagnosis of malignant melanoma metastases. The patient is in a good condition five months after treatment.

**CONCLUSIONS** Spread of melanoma to the gastrointestinal tract is rarely detected. Metastases in this location can cause obstruction, bleeding and perforation of the gastrointestinal tract, but most of them develop totally asymptotically, therefore regular check-ups are very important. Surgical treatment consisting of the local excision of the tumor of the small intestine should be method of choice, because it allows to achieve a good palliative effect, and can increase life expectancy for few years.

**Keywords:** melanoma, metastases, gastrointestinal tract

## **Multiple Institution of Extracorporeal Membrane Oxygenation Therapy in a Neonate after Persistent Truncus Arteriosus Type I Surgery: A Case Report**

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**INTRODUCTION:** Persistent truncus arteriosus type I (PTA I) is a form of congenital heart disease in which the single vessel divides into pulmonary trunk and aorta. Even after complete repair of PTA I, left ventricle dysfunction may occur, which is an indication to use an Extracorporeal Membrane Oxygenation (ECMO) - extremely invasive procedure of blood oxygenation. According to actual data 20% of ECMO are used for postoperative support in patients following cardiac surgery.

**THE AIM:** Case study of use of ECMO in a neonate after PTA I repair.

**METHODS AND MATERIALS :** Analysis of patient medical documentation.

**CASE REPORT:** Male neonate, 3.2 kg, was admitted to the Department of Pediatric Cardiac Surgery in Silesian Center for Heart Diseases for the surgical treatment of PTA I. After the surgery because of cardiac arrhythmia, followed by cardiac arrest, veno-arterial ECMO (V-A) was instituted. During the postoperative period patient underwent unsuccessful conversion to V-V ECMO, developed blood clot in the circuit and urgent decannulation was needed. After decannulation patient developed low output syndrome and reimplantation of ECMO after 4h was necessary. After 21 days from surgery ECMO therapy was finally ended. After 41 days, patient in stable condition was transferred to the Department of Neonatology.

**CONCLUSIONS:** After surgical repair of PTA I, intensive cardiac support of circulation may be required. ECMO therapy is the way of treatment when conventional methods are not efficient. The ECMO is use as the last invasive procedure for patients with respiratory and cardiac failure, may cause many complications, but could save lives of critically ill patients.

**Keywords:** Extracorporeal Membrane Oxygenation, ECMO, Persistent Truncus Arteriosus Type I, PTA, Neonate



## **The importance of proper diagnostic imaging before elective surgery of incomitant strabismus.**

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**INTRODUCTION** The term incomitant strabismus is used to describe the progressive disorder of the eyes. In the direction of paralyzed muscle eye movements are weakened or completely impossible. It causes important differences in the angle of vision in many directions. Most of these strabismus syndromes are caused by paralysis occurring in many neurological or orbital disorders, particularly in adults. It is important to choose the best kind of radiological study to outcome a surgical procedure.

**THE AIM** Presentation of imaging structures of the orbit before and after the planned surgery of incomitant strabismus.

**MATERIAL AND METHODS** The 80-year-old woman presented with high myopia was admitted to Ophthalmology Clinic due to lack of mobility of the left eye with convergent strabismus. The diagnosis was restrictive myopathy. The angles of the dislocation of the globe were analyzed using computer tomography imaging.

**RESULTS** Computer Tomography scan revealed superior and lateral dislocation of eyeballs. Extended rear pole of the eyeball was impacted between eye muscles what was the reason of eye immobility. The treatment of strabismus caused by high myopia was applied the surgical procedure involved the correction of strabismus The Yokoyama Procedure accompanied by recession of the medial rectus muscle of the left eye.

**CONCLUSIONS** Computed tomography revealed the location of the eye and extraocular muscles what allowed the correct choice of treatment and improving the mobility of the eye.

**Keywords:** incomitant strabismus, CT imaging, The Yokoyama Procedure, myopic strabismus

## **Unusual metastasis of clear cell renal carcinoma: maxillary sinus.**

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**INTRODUCTION** Distant metastases from malignant tumors to head and neck region are relatively uncommon. Majority of them are localized within the lymph nodes. The metastases to nasal cavity and paranasal sinuses are extremely rare. Among sinuses the most common localization is maxillary sinus (33%).

**THE AIM** The aim of this study was to present a rare case of renal cell carcinoma metastases to maxillary sinus.

**METHODS AND MATERIALS:** The authors present a case of 78 years old male patient referred to ENT outpatient clinic with suspicion of chronic sinusitis. The patient complained about pain and discomfort in projection of left maxillary sinus and recurrent pyogenic rhinitis. The patient underwent right nephrectomy with radical oncological treatment of clear cell renal carcinoma 8 years ago without any feature of recurrence till now.

**RESULTS** CT examination revealed a suspicion of mucocele of maxillary sinus, which should be differentiated with tumor-type lesion with bone destruction. Afterwards patient was qualified to surgical biopsy under general anesthesia. During the procedure a massive bleeding from the tumor appeared. Due to inability to obtain local hemostasis a decision to excise whole lesion was made. Histopathological investigation confirmed metastases from clear cell renal carcinoma.

**CONCLUSIONS** Primary tumors of paranasal sinuses are very rare, but distant metastases to nasal cavity and sinuses are real casuistic. According to literature they come from kidneys – the most frequent, followed by lungs and breast cancer. The authors emphasise that those metastases can appear even a long time after primary tumor treatment.

**Keywords:** metastases, clear cell renal carcinoma, maxillary sinus

## **From a molar tooth extraction to sepsis - a case presentation.**

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**INTRODUCTION** Sepsis is a frequent and heterogeneous clinical condition, which is defined as systemic inflammatory response caused by infection. The clinical picture is variable - it depends on etiological agent, genetic susceptibility, patient's comorbidities, time in which the treatment is conducted and the quality of medical care.

**THE AIM** Case presentation of a patient developing sepsis as a complication of dental procedures.

**CASE PRESENTATION** The patient is a 9-year-old boy admitted to the Emergency Department (ED) with fever, tachycardia and hypotension. A molar tooth extraction had been carried out 48 hours before admission. Patient was admitted to Laryngology Ward because of presence of a odontogenic abscess in the area of left cheek and purulent inflammation of the paranasal sinuses. Patient's condition was aggravated by generalized severe inflammatory reaction. During hospitalization draining of left cheek and Functional Endoscopic Sinus Surgery were performed. During the procedure purulent discharge was extracted from sinus . Blood cultures and the sinuses swab grew tree separate bacteria: Streptococcus constellatus, Streptococcus anginosus and Staphylococcus epidermidis. Broad-spectrum antibiotics were introduced, after some time the therapy was modified after receiving an antibiogram. After 14 days of hospitalization and treatment patient was discharged from hospital in a good general condition. The child should remain under the care of an ENT.

**CONCLUSION** Bakteriemia is a known complication of dental procedures and severe caries. In treatment of sepsis it is important to establish the diagnosis and introduce the treatment immediately. It should include both pharmacotherapy and surgery.

**Keywords:** Sepsis – Dentistry- Laryngology –FESS- Streptococcus constellatus- Streptococcus anginosus -Staphylococcus epidermidis

## **Multiple thoracoabdominal stab wounds - a persistent challenge for trauma surgeons. Case report.**

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Thoracoabdominal injury is defined as a presence of two or more penetrating wounds, involving the thorax and the abdomen, regardless of subsequent injury's severity. The low incidence of these cases impede the development of diagnosis and treatment guidelines of bicavitary injury. A 42-year-old man was transported to the Emergency Department with multiple stab wounds of chest and abdomen with an eventration. Due to his unstable condition there were not imaging investigations and he underwent a laparotomy. During operation the wounds to the abdomen were dressed and a damaged jejunum was dissected. The left pleural cavity was drained. After the surgery the patient was unstable. Bloody substance was found in a drainage tube from the area under the diaphragm. Chest radiography revealed a presence of pleural effusion and atelectasis. These findings led to a decision of conducting laparotomy and antero-lateral thoracotomy. During these surgeries the source of bleeding was identified in the left pulmonary hilus from which blood was running down to the peritoneal cavity through another diaphragm's wound. After the surgery the patient remained unstable and required mechanical ventilation. Nevertheless, having regained consciousness, he informed that he suffered from myasthenia which explained his respiratory insufficiency. The patient was discharged on the 20th day of the hospitalization in a good health condition. Patients with bicavitary injuries always pose a challenge to the surgeons. Imaging examinations should not delay an implementation of unstable patients' surgical treatment. Sequence of opening the cavities is crucial and the proper decision may decrease the mortality.

**Keywords: Thoracoabdominal injury, stab wounds**

## **Rare case of 54-year old man with dissecting aneurysm of thoracic aorta and perforation of esophagus with unclear connection**

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Work's tutor: lek. Mateusz Rydel

**Introduction:** Both dissecting aneurysm (DA) of thoracic aorta and perforation of esophagus (PE) are life-threatening conditions. We report a case of a patient with both diseases.

**Case:** The patient admitted to Internal Ward in Czeladź due to deep stomachache with nausea and emesis. On CT scan DA of thoracic aorta was revealed. The patient in hypovolemic shock transported to Vascular Surgery Unit, where stentgraft was implanted. Paraparesis in postoperative period. MR scan: Adamkiewicz artery covered with stentgraft. Referral to Neurology Unit, on CT scan haematoma of both pleural cavities and posterior inferior mediastinum was revealed. Referral to Thoracosurgery Clinic in Zabrze, X-ray with contrast showed fluid escape. Right thoracotomy- pleural cavity was cleaned, esophageal stent was implanted under endoscopic control. On the first postoperative day- reoperation, stent was fixed and open window thoracostomy was performed. The next days laparotomy with removal stent from the oesophagus, gastrostomy with pyloroplasty, were performed. Due to heart and respiratory failure further treatment in Intensive Care Unit. During the next operation the esophagus was isolated from alimentary tract and salivary fistula was formed on the neck. After general condition stabilization, esophageal reconstruction with the stomach. During control- leakage from reconstruction was revealed, therefore gastrostomy was performed. Despite intensive treatment the patient died. **Conclusions:** 1. Stentgraft implantation can be complicated with paresis due to covering the Adamkiewicz artery. 2. Contrast X-ray effective test for the diagnosis of PE. 3. DA of aorta and PE give the non-specific symptoms.

**Keywords:** Dissecting aneurysm of thoracic aorta, perforation of esophagus, stentgraft, Adamkiewicz artery

## **Mastitis in pregnancy – a case report**

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Mastitis rarely occurs in pregnant women but constitutes a typical complication of postpartum period. Severe inflammation of mamma during pregnancy may lead to sepsis threatening maternal life as well as carrying a risk of fetal infections, premature delivery and birth asphyxia. A 37-year-old woman in the 36th week of her third pregnancy was admitted to hospital due to vomiting, diarrhea and temperature of 38,6 °C as well as severe pain in her right breast. Physical examination and laboratory tests implied inflammation of the right mamma. Because of birth asphyxia and suspicion of septic shock in progress, the patient was qualified for cesarean section. After cesarean section, the mother was transferred to Intensive Care Unit. Empiric antibiotic treatment as well as therapy with bromocriptinum and breast lifting were initiated. Basing on puncture of the right breast the diagnosis of breast abscess was dismissed. Improvement of patient's general condition induced decisions to discontinue treatment with pressor amines and extubate the patient. Due to microbiological test results (growth of Staphylococcus) she was administered vancomycin. On the 14th day of hospitalization the patient left hospital. Mastitis induced by Staphylococcus is one of the possible primary sources of sepsis which requires intensive care treatment. Sepsis in pregnancy may cause birth asphyxia which is manifested by newborn's respiratory and cardiovascular system failure leading to pulmonary hemorrhage and death especially if associating with preterm birth. Symptoms suggesting mastitis and sepsis development in pregnant woman should attract particular attention during diagnostic process.

**Keywords:** mastitis, sepsis, pregnancy, pulmonary hemorrhage, birth asphyxia

## **The difficulty of treatment of patient with Malignant Peripheral Nerve Sheath Tumour. Case Report.**

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**INTRODUCTION:** Malignant Peripheral Nerve Sheath Tumour (MPNST) is a rare tumour. It may arise from various cell types, which impedes diagnosis and classification. These tumours represent 10-15% of all soft tissue sarcomas and they are usually localized in the lower limbs and the torso. MPNST is characterized by a very high risk of local recurrence.

**CASE REPORT:** The 59-year-old man came to the clinic primary care because of disturbing transformation on the right thigh. USG showed the tumor size 88x53mm and MR showed 73x45x111mm litho-liquid tumor in the subcutaneous tissue. The femur was without pathological transformation. In order to verify the histopathology, the biopsy was made. The microscopic view of a heterogeneous histogenesis indicated the MPNST. The patient was operated. It was total resection of the tumor. Next, the patient was qualified to radiotherapy and chemotherapy. In two following years the patient had control ultrasound which showed fibrotic lesions and fluid collections. The local recurrence was found. Doctors made induction chemotherapy according to the scheme IFO+ADR. The cycle of chemotherapy was discontinued due to the weakness, pain, redness on the neck. The metastases were found in the lymph nodes in the histopathological examination. Doctor recommended radiological consultation to which the patient is not reported. In the subsequent control imaging studies revealed no indication of recurrence.

**CONCLUSIONS:** The above-described case shows difficulties in the treatment of MPNST. Therefore, the tumor has high risk of local recurrence, requires special oncological vigilance in monitoring patients with MPNST. This case proves that despite the severity of the disease, the implementation appropriate treatment can be long-term survival.

**Keywords:** Malignant Peripheral Nerve Sheath Tumour (MPNST), tumour

**Extensive cutaneous ulceration of the scalp- diagnostic and therapeutic problem.**

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Ulceration is a loss of the skin or mucous membrane. It is formed by the damage of a tissue or topical inflammatory-necrotic process, which can result in complete loss of the epidermis, dermis or even subcutaneous fat. They can be an effect of impaired blood circulation, nodules or tumors lysis or be caused by chemical, physical or mechanical factors. Healing of the ulceration is a chronic process, accompanied by many difficulties and it ends in the formation of the scar tissue. The aim of this presentation was to present a case of 71-year-old patient with expansive ulceration of the scalp in the fronto-parietal area. The ulceration was extremely deep and it exposed the bones of the skull. Series of diagnostic tests was run, including: laboratory, bacteriology, histopathology tests and an X-ray of the skull. In the differential diagnosis pyoderma gangrenosum, neoplastic process, infection or trauma was considered. Skin biopsy of the scalp revealed unspecific changes with no signs of neoplasia. This case turned out to be a diagnostic challenge on account of its unclear etiology and similarity to many other disease entities. The treatment was based on antibiotics and topical therapeutics. Patient was eligible for reconstruction surgery. Carefully taking patient's medical history and performing wide range of diagnostic tests are a key to the right therapeutic decision. Many disease entities manifest themselves in a similar clinical appearance what causes problems in establishing the etiology of the ulceration. Healing of the ulcerations requires collaboration between many different specialists.

**Keywords: Ulceration, Therapeutic problem, Skin transplant**



## **Management of urology complications in 35-year old female in pregnancy with dead foetus**

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**INTRODUCTION** Vesicovaginal fistulae are one of the most arduous complications after gynecologic and obstetric surgeries. They are mostly caused by damage to the bladder resulting from said operations, prolonged labor and perinatal injuries.

**THE AIM** A case study of a female with a vesicovaginal fistula after uterus extirpation performed due to pressure ulcers resulting from the delivery of a dead fetus.

**MATERIALS AND METHODS** 35-year-old woman transferred to the Urology Department with suspected vesicovaginal fistula. Previously hospitalized in many departments due to perforation of the uterus, vagina and bladder, rectovaginal fistula and septic shock. Physical examination, ultrasound, CT scan were performed.

**RESULTS** The patient was qualified for surgery. Cystectomy was performed, and an orthotopic bladder was reconstructed using Studer's method. The urethers were placed on a common fragment of the Studer's bladder mucosa. The patient left the department on the 15th day after surgery with a Foley's catheter. After the catheter's removal, urinary incontinence was no longer observed. Further treatment takes place on an outpatient basis.

**CONCLUSIONS** A substitutionary intestinal bladder may be an advantageous alternative for women in which the function of the bladder as a urine reservoir was lost after cystectomy due to causes other than a neoplasm. According to scientific data, creating a functional orthotopic urine reservoir connected to the urethra in selected women who underwent cystectomy is fully possible. The prerequisite is to perform a conservative cystectomy sparing the urethra and nerves, and to create a strong foundation for the intestinal bladder.

**Keywords:** dead foetus, pregnancy, orthotopic bladder, vesicovaginal fistula

## **Nephron sparing surgery in cross-fused renal ectopia– case report**

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**Introduction:** Crossed fused renal ectopia is a rare congenital malformation, which is reported to be usually asymptomatic but may have varied presentations. **Objectives:** To present a case report of 68 year old female patient with a tumour of cross fused pelvic kidney.

**Materials and methods:** 68 year old female patient with a cross fused pelvic kidney was admitted to the Urology Department in Zabrze due to renal tumour diagnosed with CT. The examination showed a centrally positioned, 8cm tumour with contrast enhancement, invading the collecting system of the left part of the kidney. The patient was qualified for surgery. **Results:** We performed nephron sparing surgery through abdominal approach. Warm ischaemia time was 20 minutes with removal of the tumour and reconstruction of opened caliceal system. Blood loss was 300 ml. Malecot drain was left in the collecting system. Postoperative course was complicated with acute kidney injury. After one course of hemodialysis renal function parameters gradually returned to preoperative values. 10 days after surgery antegrade pyelography with Malecot drain removal and D-J catheter insertion was performed. Patient was discharged home. Pathology report showed 7,5cm tumour – renal cell carcinoma G1 with negative surgical margins.

**Conclusions:** Complete excision of a big tumour in cross-fused renal ectopia is a challenging procedure, but nephron sparing approach should always be taken into consideration to avoid permanent renal replacement therapy.

**Keywords:** Crossed-fused kidney, nephron sparing nephrectomy

## **Elephantiasis of abdominal wall in the course of pathological obesity. Case report.**

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**Introduction:** Lymphedema, otherwise called elephantiasis, is a pathology resulting from impaired lymphatic drainage from tissues. It most often occurs in the course of breast cancer metastasis to axillary lymph nodes or after surgery. It can also be a result of scarring after injury or radiation. So far, 7 cases of abdominal elephantiasis in course of obesity have been described in the literature.

**Case:** The 48-year-old patient referred to a surgical ward complaining of a huge, reddened and itchy skin fold that hung from the abdominal wall to the ankle height, which prevented normal functioning. Because of the size of the change, the patient with suspicion of liposarcoma was referred urgently to the General Surgery Clinic. In an interview: pathological obesity (157cm / 193kg BMI: 78), hypothyroidism, type 2 diabetes and hypertension. In the clinic patient have been qualified for surgery. Surgeons removed 30kg skin fold and performed abdominoplasty. In the histopathological study, changes revealed a microscopic image corresponding to changes in course of elephantiasis. Due to the earlier suspicion of liposarcoma, an immunohistochemical study was conducted on mesenchymal tumors, which in the range of desmin, SMA and S100 were negative. The postoperative course was uncomplicated. The patient was discharged home in a good general condition.

**Conclusions:** Elephantiasis of abdominal wall is an extremely rare complication of impaired lymphatic drainage in the course of obesity. Despite the fact that pathologic obesity is associated with perioperative complications, in cases similar to the one presented, surgery is the only effective form of treatment.

**Keywords:** general surgery elephantiasis lymphedema tumor abdomen

## **Gastrointestinal fistula - a complex interdisciplinary problem. Case report.**

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**Introduction:** Enterocutaneous fistula is considered as the most difficult clinical problem which general surgeon can face with. Unfortunately, despite an interdisciplinary approach, enterocutaneous fistula still has a high mortality rate of approx. 20%.

**Case:** The 52-year-old patient was admitted to the Clinic of General Surgery in Poznan in severe condition, after several previous laparotomies performed during hospitalization in another center and abdominal wall loss with present entero-cutaneus fistulas. It was decided to implement the NPWT but with no results – next laparotomy was necessary and it was complicated by bleeding and anastomotic dehiscence, which required re-laparotomy during which final jejunostomy were emerged. The Patient in serious condition was taken to the ICU and after 3 days due to the loss of abdominal wall the biological patch was implanted. In 2 weeks next re-laparotomy were performed because of perforation of the jejunum which caused a rapid clinical deterioration. A further therapy was continued with VAC, however, despite the intensification of diagnostic and therapeutic procedures patient died of septic shock.

**Conclusion:** The use of NPWT allows for temporary protection of the intestines and is an important element in the treatment of chronic wounds and skin defects, and also increases the effectiveness of spontaneous fustilas occlusion. However, in order to achieve the best possible treatment effect, a multidisciplinary approach integrating nutrition, antibiotic therapy and improved surgical techniques is required from the beginning.

**Keywords:** ECF EAF general surgery negative pressure therapy

## **Implantation of single chamber atrial pacemaker in non-typical localization – a case report of the child with double inlet left ventricle and sick sinus syndrome.**

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**Introduction:** Double inlet left ventricle (DILV) is one of several heart defects known as single ventricle defects, which is very rare condition. This congenital heart defect appears in 5/100,000 newborns. Babies with DILV have an intact left ventricle and a hypoplastic right ventricle. Both atria supply blood to the left ventricle. The Fontan operation is the procedure of choice in DILV. Pulmonary atresia (PA) is a congenital malformation of the pulmonary valve in which the valve orifice fails to develop. Researchers estimate that about 1 out of every 10,000 babies is born with this defect.

**Case report:** A 7 year old girl was admitted to Silesian Center for Heart Diseases to implant an single chamber atrial (AAIR) peacemaker. She was diagnosed with double inlet left ventricle (DILV) and pulmonary atresia (PA). As a newborn, at the age of 12 days she underwent a central shunt, then in the age of 9 months a hemi-Fontan procedure and at the age of 5 a Fontan procedure. Due to a sick sinus syndrome (SSS) a girl's heart rate was slow (about 52/min) and in a Holter EKG rhythm from AV node with min heart rate 38/min were observed.. The AAIR peacemaker was implanted in the SVC-PA (superior vena cava- ipsilateral pulmonary arteria) canal on 22nd of November 2016. There were no peri-procedural complications. In the short-term follow-ups there were no complications and abnormalities observed. The parameters of the implanted pacemaker were stable.

**Conclusion:** An implantation of a AAIR peacemaker in non-typical localization such as Fontan's canal can be a safe and effective method of sick sinus syndrome treatment in patients with double inlet left ventricle.

**Keywords:** double inlet left ventricle, sick sinus syndrome, single chamber

## **The beneficiaries of advances in interventional cardiology are patients with high risk of atherosclerosis progression and cardio-vascular complications. A case report.**

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Atherosclerosis may cause coronary artery disease (CAD). Throughout the past decade medicine made a breakthrough progress in the interventional methods of the CAD treatment. A 68-year-old man with unstable angina was admitted to the hospital. Medical records revealed a fourteen-year history of CAD. In January 2001 he suffered from the anterior myocardial infarct (MI) treated primarily conservatively. Two months later angiography showed a critical ostial lesion in the left anterior descending artery (LAD), 60% stenosis of the proximal right coronary artery (RCA), marginal (Mg) branch and 60% of left ventricular ejection fraction (LVEF). Patient underwent coronary artery bypass surgery (CABG) of three vessels (LIMA LAD, saphenous vein grafts into RCA and Mg). After the next 3 months acute MI, complicated by the cardiogenic shock, occurred. Angiography revealed failure of SVG into RCA. Thus, percutaneous coronary intervention (PCI) of native RCA with two bare metal stents (BMS) was done. After 14 years, current angiography showed failure of both SVGs, narrow LIMA to LAD graft, critical distal left main (LMC) stenosis and occluded RCA due to restenosis of BMS in proximal part. LVEF was 35%. Patient underwent successful PCI of LMC, with DES implantation. After 2 years the patient is without symptoms of angina with LVEF 40%. If the contemporary diagnostic methods and treatment options had been applied in 2001, it could have prevented restenosis process and a significant drop in LVEF of this patient. It is clear that new technologies, not available in the past, may prevent consequences of atherosclerosis progression in high risk patients of recurrent cardio-vascular events.

**Keywords: a coronary artery disease, drug-eluting stent, bare-metal stent, interventional cardiology**

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# OUR PART IN SCIENCE

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KATOWICE - POLAND



## **SESSION OF CASE REPORTS NON - INTERVENTIONAL I**

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## The phenotypic male with karyotype 46 XX

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The presence of a female karyotype in completely phenotypic male is extremely rare and occurs in about 1:20 000 - 1: 25 000 of cases. Most often the development of the male phenotype is dependent on the translocation of the SRY gene to another chromosome.

Presentation and case study of phenotypic male with karyotype 46 XX, in which during the infertility diagnosis no Y chromosome and SRY gene was revealed, which is one of the rarest chromosomal aberrations.

32 year old man diagnosed with infertility. Several diagnostic tests were performed: level of testosterone, genetic diagnostics for cystic fibrosis, the study of microdeletions in the AZF region of the Y chromosome, karyotype analysis, CT of the abdomen and pelvis with contrast enhancement, bilateral testicular biopsy, semen analysis.

The level of testosterone was within the normal range. The lack of the most common mutations in the CFTR gene responsible for cystic fibrosis was detected. Cytogenetic study of peripheral blood lymphocyte revealed karyotype 46 XX. The semen study showed azoospermia. Deletion of all studied AZF markers of the Y chromosome was detected. Moreover, the sequence of the SRY gene was not detected. The CT study showed small clusters of tissue bilateral to the seminal vesicles.

90% of men with XX karyotype has the SRY gene responsible for the development of male gonads, which has been translocated to another chromosome. Cases of phenotypically normal male in whom there was no SRY gene was described in the literature only few times. The mechanism of differentiation of the sexes towards male in this case is not known.

**Keywords:** Infertility, male, 46,XX male syndrome, SRY gene

## **Diagnostic difficulties. Case study of 19-year-old woman with clinical symptoms in gynecology, urology and endocrinology**

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The coexistence of many symptoms manifesting ambiguously indicative progress of disease entity presents many diagnostic and nursing problems. The patient's condition in hypothalamic-pituitary-thyroid hormone fluctuations may change very quickly, wasting a body if treatment is not beginning early enough. Co-occurrence of reproductive and urinary disorders also makes it difficult to diagnose because of the symptoms' overlapping and a necessity for many laboratory tests.

Case report A 19-years-old woman initially complaining of a heat feeling, excessive sweating, hair loss, difficulties in falling asleep, insomnia and increased nervous excitability. In addition, the menstrual period had disappeared. After diagnosed subclinical hyperthyroidism and application of thiamazole treatment, the patient's condition improved briefly, followed by hypothyroidism. The woman reported feeling cold, tired, insomnia, lack of concentration, learning difficulties, hair loss, constipation, palpitations and dizziness. It appeared frequent organism's infections and painful shooting pains in the low part of abdomen. Pseudomonas spp urinary system infection has been reported. Laboratory tests performed during hospital stay have shown ovarian dysfunction and functional hyperprolactinemia. Treatment has been implemented.

In the diagnostic and nursing process, it is extremely important for the patient and his family to cooperate with medical staff: doctors and midwife, enabling accurate diagnosis and treatment initiation so the symptoms of illness can disappear or diminish, and sometimes it saves life. It is significantly changing patient's life comfort and health.

**Keywords: Thyroid disease, amenhorrea, bacteriuria, hyperprolactinemia**

## **Cryptogenic organising pneumonia - enemy in the shadows.**

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Cryptogenic organising pneumonia (COP) is a rare lung condition affecting bronchioles and alveoli. The cause and exact incidence and prevalence of COP are unknown. The symptoms of the disease are: cough, dyspnoea, fever, fatigue, crepitations and may strongly indicate community acquired pneumonia (CAP).

89-year old woman with untreated diabetes type 2 and hypertension presented herself at the department of emergency medicine with symptoms of dyspnea, fever, cough and general malaise, after previous unsuccessful antibiotic treatment with amoxicillin. Physical examination revealed crepitations in base of the right lung and both apexes of the lungs and lowered saturation of 89%. Chest x-ray was performed to confirm the diagnosis of pneumonia. PCR for influenza was negative. She was prescribed a new antibiotic treatment of ceftriaxone combined with azithromycin and later admitted to the geriatric department of Hospital Santa Maria in Lleida. After seven days of treatment and without significant improvement of patient's state, a CT was ordered. It revealed changes to bronchioles and alveoli which were recognized as a cryptogenic organizing pneumonia. New treatment of glucocorticosteroids was ordered, and shortly after patient fully-recovered.

Considering the fact, that the symptoms of the COP are frequently similar to the symptoms of CAP it is vital to keep in mind the possible differential diagnosis in case of patients with suspected pneumonia which is not responsive to antibiotic treatment. In this instance specialized tests, especially a high-resolution computed tomography are highly recommended.

**Keywords: pneumonia, geriatrics, cryptogenic organising pneumonia**

## Diagnosis difficulties with coarctation of aorta in children

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Coarctation of aorta (CoA) is a lumen stricture located frequently below the vent of left subclavian artery. It accounts for 5 - 7.5% of all congenital heart defects, twice or thrice more repeatedly in boys than girls. Most typical symptom of CoA is pressure enhancement in upper limbs and hypotension in lower limbs with lack of pulse in femoral arteries.

Work presents a description of a 11-year-old boy, admitted to Department of Paediatric Cardiology in Katowice with arterial hypertension. (RR= 161/98, 160/95 mmHg). The boy was physically active and asymptomatic. In a physical examination overweight, RR 161/100, contractional murmur above the heart and palpable pulse deficiency in both femoral arteries were detected. Magnification of left atrium and ventricle with outgrown myometrium, increased velocity of flow in descending aorta were stated in echocardiography(2D and Doppler), without visible coarctation site. CT scan and MRI showed subdiaphragmatic CoA with the stricture directly after the left subclavian artery (in the site of the stricture - 2,7 mm). Heart catheterization validated identification of a critical type of CoA. Balloon angioplasty of isthmus of aorta had been performed and then critical stricture was broaden effectively with an implantation of a stent (AndraStent 35XL). Pharmacological treatment has been started (Amlozek, Accupro, Verospiron).

This challenging case illustrates the importance of early detection and treatment of CoA in children (↑RR and lack of pulse in femoral arteries in pediatric physical examination)

**Keywords: coarctation of aorta, CoA, arterial hypertension, femoral pulse, balloon angioplasty**

## Negative outcomes of intrauterine growth restriction

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Intrauterine growth restriction (IUGR) concerns 3-10% of pregnant women and it is associated with maternal, fetal or placental disorders. Pregnancy with IUGR requires monitoring and termination of gestation when the risk of intrauterine death is greater than the risk of the negative outcomes due to the prematurity.

Retrospective case report describes a 25-years-old pregnant woman who was admitted to the Obstetrics and Perinatology Department in the 26th week of gestation due to the early IUGR.

The disorder was diagnosed based on low estimated fetal weight (s on the Apgar scale in the 10. minute. A baby required resuscitation and was admitted to the Intensive Care Department. Examinations showed partial agenesis of septum pellucidum and vermis cerebelli, features of pulmonary hypertension and retinopathy due to prematurity. An infant was discharged home in 184th day of life in a good condition.

Following case shows how important is to monitor the biophysical status of the fetus and make a decision about termination of pregnancy.

**Keywords: intrauterine growth restriction, low estimated fetal weight, prematurity**

## Toxic liver damage caused by kambo ritual – case report

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The secretion from the frog *Phyllomedusa bicolor*, known as Kambo ritual, has traditionally been used as means of purification of the body in numerous countries in South America. During Kambo rituals the excretions of *Phyllomedusa bicolor* are applied to the fresh wounds.

The use of the secretion of the *Phyllomedusa bicolor* can lead to serious multiple organs damage.

34-year-old man was referred to hospital due to icterus. The patient complained of skin itching, weakness and pain in the upper abdomen which appeared a few days before hospitalization. The patient has stopped drinking alcohol and smoking cannabis since 2 months. At that time, once a week, he performed the ritual of Kambô. Physical examination revealed a slight icterus, overweight (BMI = 26) and a curious scar on the abdomen. Blood tests showed: ALT - 2155 U/l, AST - 878 U/l, GGTP - 203 U/l, Bilirubin concentration - 3.02 mg/dL, prothrombin time- 14.2 s, ammonia concentration - 137 mg/dl and creatinine concentration - 1.03 mg/dl. The abdominal ultrasound showed increased echogenicity of the liver. The HBV, HAV, HCV, CMV, EBV and HIV infection were excluded, as well as hemosiderosis, AIH and Wilson's disease.

The patient received symptomatic treatment: lactuloses, silymarin and ornithine and his condition improved after a few days. In the described case, there is an association between liver damage and performed a ritual Kambo.

The most common cases of illness and deaths after Kambo rituals are associated with depressive impact of derivatives of opioids on the CNS and the effects of toxins on the cardiovascular system. However, it might be damaged by toxins kidney, pancreas and liver.

**Keywords:** liver damage, Kambo ritual, phyllomedusa

## Case report of triplet heterotopic cesarean scar pregnancy

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Heterotopic pregnancy is the coexistence of an intrauterine and extrauterine pregnancy. The incidence of heterotopic pregnancy is about 1 of 30000 spontaneous pregnancies and 1 of 100 pregnancies after assisted reproduction. Cesarean scar ectopic pregnancy (CSEP) is the rarest form of ectopic pregnancy. A 31 year old woman in 6th week of the second pregnancy was admitted to the Department of Gynecological Endocrinology with the aim of triplet heterotopic pregnancy management. The patient had undergone the c-section in 2013 and the subsequent pregnancy was the result of in vitro fertilization with embryo transfer. The ultrasound examination revealed a single intrauterine gestational sac with fetal pole and visible fetal heartbeat and a dichorionic, diamniotic twin pregnancy within the scar after c-section. One gestational sac contained an echo of the embryo whereas the second one was empty. On the second day after admission under ultrasound guidance, a selective embryo-reduction procedure was performed. 2,5ml 10% KCl was delivered to the two gestational sacs nested in the scar, without harm to the embryo positioned properly in the uterus. In the further course of pregnancy the fetus was developing properly. The patient gave birth (by a C-section) to a healthy son (3580g, 57cm, Ap10). In the recent years, due to the increasing prevalence of assisted reproduction techniques and the number of c-sections performed, the risk of having CSEP is increasing. Early diagnosis of this pathology through accurate ultrasonography gives an opportunity to plan appropriate treatment that reduces the risk of complications in women and enables the development of a properly located embryo.

**Keywords: heterotopic pregnancy, triplet pregnancy, cesarean scar ectopic pregnancy, selective embryo-reduction**

**“The important thing is not to stop questioning”- NF2 case report**

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Neurofibromatosis type 2 (NF2) has an autosomal dominant pattern of inheritance, however one-half result from de novo mutations of NF2 gene (22q12.2). Symptoms of NF2 may include deafness, tumors, skin, neurological and ophthalmic disorder (e.g. cataract- 81%). Severe form of NF2 is characterized by early onset, rapid progression to premature death.

A 10,5 years old girl was diagnosed due to limping, gait and coordination disorders. Brain imaging showed multiple soft tissue masses in the brain and spinal cord. Partial resection one of all revealed atypical meningioma WHO III. The girl was disqualified from radiotherapy because of decreased cerebrospinal fluid volume. Next MRI revealed progression of some masses. The lack of positive results in therapy lead to re-examination of MRI. Bilateral vestibular schwannomas were detected. Thanks to the new findings and in-depth interview (the girl was treated due to congenital cataract), cafe-au-lait spots the diagnosis of NF2 was suspected, than confirmed by geneticist. Neurosurgeon re-consulted the case and decided to resect masses in spinal cord because according to the literature, in NF2 there might be different types of tumor in CNS. Later chemotherapy started. Treatment's satisfactory effect permitted to begin radiotherapy. Because of girl's emaciation, depression and stable disease the chemotherapy was stopped. Up to date, the girl remains under the medical care.

NF2 can lead to disablement and death before obvious symptoms occur. In diagnostic process sometimes it's better to do a step back to put together ostensibly irrelevant symptoms to make two steps forward. Curiousness and holistic approach can be a key to proper diagnosis.

**Keywords:** Neurofibromatosis type 2, NF2, pediatric oncology, brain tumor, merlin protein, meningioma, ependynoma, vestibular schwannoma, cataract, cafe-au-lait spots



## Case study of a child with Alexander disease.

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Alexander disease is an autosomal dominant leukodystrophy with three clinical types: infantile, juvenile and adult. The disease manifests with macrocephaly, retarded psychomotor development and seizures.

Authors present a boy born vaginally at term weighing 4280g, with head circumference of 33.5cm, rated 8 points in Apgar scale. Parents were concerned with the child's delayed development. Movement rehabilitation has been started due to inappropriate distribution of muscle tone since 8th month of life. Ultrasound examination was executed at 12 month which exposed enlargement of lateral ventricles and third ventricle. It was confirmed by magnetic resonance imaging which additionally revealed spots of impaired myelination. At 18 months old the boy was hospitalized due to prolonged episode of left-sided seizures which secondarily generalized followed by altered consciousness. Regression of psychomotor development followed the first seizures. Drug-resistant epilepsy was diagnosed, antiepileptic treatment managed to stop seizures for 10 months. Later he was repeatedly hospitalized due to intensification of polymorphic attacks during infections. Neurological examination showed macrocephaly, hypotonia with preserved tendon and periosteal reflexes and ataxia features. At the age of 5 molecular tests confirmed presence of pathogenic mutations of GFAP which is responsible for Alexander disease.

Alexander disease leads to severe disability and child's death. Treatment is exclusively conservative. Key is to limit seizures and infections occurrence which cause disease exacerbation.

**Keywords: Alexander disease, leukodystrophy, macrocephaly, epilepsy**

**Children with atypical haemolytic-uraemic syndrome- treatment and prevention.**

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Haemolytic-uraemic syndrome (HUS) is a disease characterized by hemolytic anemia, thrombocytopenia and acute kidney failure. It usually occurs in children below 5 years old. Atypical haemolytic-uraemic syndrome (HUS ) represents 10% causes of HUS and is excessive activation of complement system.

22-months girl was admitted to hospital due to infection of upper respiratory tract, paleness with jaundice, petechia and anuria since 3 days. The day before hospitalization girl vomited and had hematuria. HUS had been confirmed in laboratory examinations. On the 15. day of hospitalization occurred neurological disorder: disorder of consciousness, rotations of eyes, trismus, sialorrhea without clonic convulsions. After several minutes patient needed resuscitation. CT scan didn't show any abnormalities. Patient had been moved to intensive therapy, where plasmapheresis has been done. After treatment girl was discharged. After 1 year symptoms of aHUS returned. Patient was qualified to renal replacement therapy. Because of impossibility of eculizumab treatment girl had got plasmapheresis. Despite of this therapy the third episode of aHUS occurred 3 years later after upper respiratory tract infection.

Eculizumab is a humanized monoclonal antibody that is a terminal complement inhibitor. It leads to inhibition of thrombotic microangiopathy. In pediatric patients eculizumab give platelet count normalization, complete thrombotic microangiopathy response, and 9 improvement in eGFR from baseline. Pediatric patients treated with eculizumab also discontinue dialysis.

**Keywords: eculizumab, aHUS, atypical haemolytic-uraemic syndrome**

**From routine examination preceding nursing home admission- to detecting endocrinological “bomb” with unknown ignition- may so advanced neoplasm stay in hiding? Case report.**

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Neoplasms with unknown primary site make up 2-5% of malignancies. In the half of cases, multiple lesions are present while diagnosing, mostly engaging lymph nodes, liver and lungs. Symptoms are related to localisation of cell masses and metabolic implications. Inability to detect primary site with so advanced techniques remains a riddle. One of the hypothesis suggests such genetic characteristic of particular neoplasm that leads to metastasizing rather than to local progression. Uniquely heterogenic group pose neuroendocrine tumours (NET). Due to insidious course they may rise for years and be detected incidentally. Interestingly, autopsies reveal 25 times more of NET than epidemiological statistics point. Opinion that metastases compromise patient's chances to achieve effective treatment is incorrect. In the era of evidence based medicine, we have access to novel, targeted therapies that prolong and improve quality of life. The example of astonishing disproportion between tumour progression and clinical picture is the case of 66-years old female patient of SUM Clinic in Katowice. Examinations initiated by routine chest X-ray revealed diffused neuroendocrine neoplasm with unknown primary site, with ectopic secretion of ACTH and PTH, secondary hypercortisolemia, hypercalcemia and hypothyroidism. Such constellation led to suspicion of multiple endocrine neoplasia type 1 syndrome (MEN1). Specifying genetic mutation and “starting point” increases the chance of improving outcomes of the patient, but also focusing oncological vigilance on her relatives. Therefore, we present illuminating lesson of oncology, endocrinology and art of personalized medicine.

**Keywords: Neuroendocrine neoplasms, MEN1 syndrome, Ectopic hormone production**

## **Mesalazine-induced renal failure in children with ulcerative colitis – case reports**

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5-aminosalicylates, including sulfasalazine and mesalazine, are used as first line therapy of inflammatory bowel disease (IBD), including ulcerative colitis. Increasing the dose of 5-aminosalicylates in case of disease exacerbation, despite generally good tolerability, may result in the occurrence of serious side effects.

The study presents three pediatric patients diagnosed with ulcerative colitis, who experienced renal dysfunction in the form of decreased glomerular filtration rate during the oral mesalazine treatment.

An essential part of a proper therapy is clinical observation of a patient, including general condition and monitoring laboratory parameters in order to diagnose possible renal insufficiency, especially during the increased dose of 5-ASA connected with exacerbation of the disease. Decreased glomerular filtration rate in the course of treatment suggests drug-induced impairment of renal function and it is a recommendation to terminate the treatment.

**Keywords: ulcerative colitis, mesalazine, renal failure**

## Severe polycystic kidneys in neonate - case report

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Potter's Syndrome is a rare congenital disorder seen more predominantly in males. It refers to a group of findings which are associated with the oligohydramnios due to renal failure in an unborn infant. It is characterized by the typical physical appearance of a foetus, which is associated with renal agenesis or polycystic kidneys with pulmonary hypoplasia. The affected children are usually stillborn or die shortly after birth due to severe respiratory insufficiency.

Case presentation of a preterm infant with Potter Syndrome. A preterm, male twin born by emergency cesarean section at 30 GW with severe condition, presenting symptoms of circulatory failure and respiratory distress. Physical examination showed large abdominal circumference - 70 cm, dysmorphic facial features and short deformed chest, bony pelvis and cryptorchidism. Also noticed left sided torticollis and malformations of the limbs with joint contractures. As a result of developing multiple organ dysfunction syndrome, the boy died after 6 hours of life. The autopsy revealed congestion in many of organs and big cysts of both kidneys, covered by cuboidal epithelium.

Potter's syndrome refers to the typical facial appearance and associated pulmonary hypoplasia caused by lack of protection function of amniotic fluid. Ultrasonography checkup during the 1st trimester of pregnancy helps us to identify these pathology early which gives a chance to prepare mentally parents to termination of pregnancy.

**Keywords: Potter's Syndrome, oligohydramnios, Potter's facies, pulmonary hypoplasia**

## Idiopathic non-cirrhotic portal hypertension: a case report

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Portal hypertension, known mostly as a result of liver cirrhosis, can be a disease itself. Idiopathic non-cirrhotic portal hypertension (INCPH) is a rare condition characterized of intrahepatic portal hypertension in the absence of liver disease and splanchnic venous thrombosis.

A 22-year-old woman with a suspicion of liver cirrhosis with splenomegaly and hypersplenism was admitted to the clinic for evaluation to liver transplantation. The patient's complaint was fatigue, with no previous history of liver function decompensation. LFT were normal, slight microcytic anemia and thrombocytopenia were observed. Shear wave elastography showed advanced fibrosis of the liver, ultrasound examination revealed numerous focal areas of nonhomogenous echogenicity and collateral portal circulation. MRI pointed to nodular regenerative hyperplasia (NRH). Ascites and portal and hepatic veins thrombosis were excluded. No oesophageal varices were found in esophagogastroduodenoscopy. ADAMST13 was within the normal limit. The histopathological examination of the liver showed preserved trabecular structure with slight fibrosis of the sinusoids, with some lymphocytic infiltration, focal capillarisation, enlarged central venules and indifferent hyperplasia of the biliary ductules, confirming portal hypertension without liver cirrhosis.

Liver cirrhosis is not the only cause of portal hypertension. Idiopathic non-cirrhotic portal hypertension is a rare condition and diagnosis is made by the exclusion of advanced fibrosis of the liver and splanchnic veins thrombosis. Nodular regenerative hyperplasia of the liver is one of possible histopathological feature of INCPH.

**Keywords:** portal hypertension, liver, idiopathic, non-cirrhotic

## Posterior Reversible Encephalopathy Syndrome as the first symptom of PNET in an 8.5-year-old boy: a case report.

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Posterior Reversible Encephalopathy Syndrome (PRES) is characterized by clinical and radiological symptoms. Typical clinical pictures include: headache, seizures, visual abnormalities, consciousness impairment and nausea/vomiting. MRI shows a characteristic cerebral oedema, predominantly localized in posterior cerebral grey and white matter. The pathophysiology is not fully understood, but there are many known risk factors for PRES development.

8.5-year-old boy was referred to our clinic because of abdominal tumor. Previously the admission, patient complained of severe headache, nausea and vomiting. During the day he demonstrated generalised tonic-clonic seizures and disturbance of consciousness. Patient was admitted to the hospital where anticonvulsant therapy was started. The abdominal ultrasonography disclosed a multifocal abdominal tumor and secondary hydronephrosis, therefore he was transferred to our clinic. At admission, patient's BP was 180/110, he had still disorders of consciousness. Cerebral MRI revealed a hyperintense abnormalities predominantly in the parietal-occipital area. He was diagnosed with PRES. Hypotensive treatment were added. Patients conditions improved next day, all neurological symptoms disappeared in a few days. Biopsy of abdominal lesions revealed Primitive Neuroectodermal Tumor (PNET). Currently, the patient is in partial remission of tumor and individual chemotherapy is continue. The controlled cerebral MRI showed a significant regression of PRES changes.

We have described the case when PRES was the first manifestation of cancer. To the best of our knowledge this is the first case of PRES related to PNET.

**Keywords:** PRES, PNET, hypertension, hydronephrosis

## **From lymphocytic hypophysitis to germinoma: a case report of a 14-year-old boy with familial history of brain tumours.**

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Germinoma represent about 3.4% of all primary intracranial tumors, predominantly localized in the suprasellar region. Clinically, germinomas may cause posterior and anterior pituitary hormone deficiency. Clinical, pathological and radiological symptoms of intrasellar germinoma are very similar to other pituitary stalk lesion therefore the diagnosis can be difficult.

A 14-year-old boy was admitted to the clinic for diagnosis of growth retardation. He was recognized with a combined pituitary hormone deficiency and central diabetes insipidus. A MRI scan of the sellar region showed slight enlargement of the pituitary stalk (5mm). Serum AFP and beta HCG were negative. He received a recombinant growth hormone treatment. Following MRI showed further pituitary stalk thickening (15mm) and also infiltration of optic chiasma and right optic nerve. He was suspected lymphocytic hypophysitis. GH therapy was stopped. Biopsy of the lesion confirmed inflammatory infiltration of the pituitary stalk. Steroid treatment was included without minimal improvement in MRI. Biopsy specimen were sent to second, independent pathologist to verify the diagnosis. Immunostainings of placental type alkaline phosphatase (PLAP+) were performed and the presence of germinoma cells was confirmed. After chemotherapy and radiotherapy, significant reduction of stalk volume was noticed (4mm), confirming complete remission.

Lymphocytic hypophysitis might be a first sign of a host reaction to an occult germinoma. Clinical and radiological symptoms of pituitary changes are very similar therefore biopsy is needed to proper diagnosis.

**Keywords: Brain tumour, Lymphocytic hypophysitis, Germinoma, Children**



## Immunocompromised patient with non-specific ulcerated lesions

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Zoster is the result of latent VZV reactivation. Pain and skin lesions are an important clinical zoster symptoms. The risk of zoster is higher among immunosuppressed patients and the manifestation could be atypical. Immunocompromised individuals have an increased risk of complications such as viral and bacterial superinfections. We present 51-years old female suffered from RA with scattered skin lesions. Clinical examination revealed erythematous papulas, folliculars and ulcerations. First lesions appeared 1 month before admittance to the clinic and they were located on the right thigh. In few days they spread to the face, trunk and limbs. Since 10 years the patient was treated by suppressing immune system drugs. In order to identify the cause, a wide range of tests including CBC, CRP, liver transaminases as well as viral diagnostics - HBV, HCV, HIV, VZV, HSV1 HSV2 and VDRL test were performed. Moreover skin biopsy was taken to mark ANA, ANCA, complement C3c C4, anti-CCP antibodies. The rheumatic and infectious diseases consultations were performed. The tests indicated the following results-VZV IgG, antyHSV1, antyHSV2 were positive. In connection with the results, the suspicion of disseminated Zoster was being verified. The folliculars fluid was tested. It detected DNA at a concentration of VZV  $8,19 \times 10^8$  copies/ml. After treatment with acyclovir and doxycycline the patient improved. Methotrexate and chloroquine were discontinued. We report this case to take notice of difficulties in diagnosis of skin diseases among immunocompromised patients. This case illustrates that the rare serious infectious diseases (such as smallpox or anthrax) should be considered in the differential diagnosis.

**Keywords:** Zoster, RA, immunosuppression, atypical skin lesions

## **A HNF1B gene mutation as a cause of family chronic kidneys failure**

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HNF1B is the transcription hepatocyte nuclear factor 1 $\beta$ . Heterozygous mutation of region coding HNF1B, splice sites and deletion is one of the most common monogenic causes of renal failure. In patients with this mutation the most frequent symptoms are renal cysts and other structural disorders. The malformations associated with HNF1B gene mutation are multisystem. The known disorders include: diabetes mellitus, exocrine pancreatic insufficiency, reproductive system disorders, liver dysfunction, neurodevelopmental anomalies among others. There is no clear correlation between genotype and phenotype, numerous pathologies may develop as the disease progresses, but this mutation is always associated with the renal disease.

A 2,5-year old boy was born in 33 Hbd; with unknown medical history of family nephropathy at the time of birth. Laboratory tests revealed features of impaired glomerular filtration rate. In the USG there was an increased echogenicity of the kidneys. Further USG examinations indicated a significantly blurred cortico-medullary differentiation and a presence of small cysts. The child is constantly treated with amlodipine due to the hipertension. The twin sister of a boy was dialyzed from a moment of birth due to a chronic kidneys disease which presented as anuria after delivery. Sister died at the age of 6 months. In 2016 patient's mother and grandmother were diagnosed with nephropathy. Genetic researches showed a mutation in HNF1B gene.

A further observation of a child development focused on early detection of other abnormalities which are characteristic to a HNF1B gene mutation is necessary.

**Keywords: chronic kidneys failure, HNF1B mutation**

## Diagnosis of meningioma in pregnant woman de novo.

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Meningiomas are type of often occurring benign brain tumors. Generally they make 20-25% of all brain neoplasms. A number of haemodynamic changes during the pregnancy has stimulating effect on the development of the tumor and its symptoms.

The goal of the work was an analysis of the pregnancy and labour course in the case of 28 years old gravid with diagnosis of the meningioma during the pregnancy.

A subject of the study was pregnant woman, aged 28, in 31 Hbd who was diagnosed with brain tumor localized intracranial, infracerebral in frontal-temporal region and extensive vessels supplying the tumor which make the „sunrays” image. The authors have developed a proprietary questionnaire including closed and open questions. Moreover, patient's complete medical record had undergone an analysis.

The patient with meningioma diagnosed during pregnancy has been also stated to have numerous functional disorders, including numbness of the left part of the face and left hand, symptoms of the peripheral irritation of the facial nerve and frequent malaise. Pregnancy has been urgently terminated in 37 Hbd because of epileptic seizure. Then newborn scored 10/10 in Apgar score and weighed 3630g.

1. Meningioma in pregnant patient causes significant deterioration of their wellbeing and functioning in everyday life.
2. During pregnancy meningioma can provoke different symptoms, which should cause you to pay attention while taking an extended medical interview.
3. A woman with recognized meningioma should be take nundertwenty-four-hour care of a familiar person to maintain constant help and protection.

**Keywords: woman, pregnancy, brain tumor, complications.**

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# OUR PART IN SCIENCE

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## **SESSION OF CASE REPORTS NON - INTERVENTIONAL II**

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## **Embolism of ciliary-retinal artery - diagnostic difficulties**

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Ciliary-retinal artery is a branch of short posterior ciliary arteries, which arise from the ophthalmic artery. It is a quite rare variant that occurs in about 20% of patients. Ciliary-retinal artery supplies area of macula and fasciculus papillomacularis.

A 38-year-old woman was complaining of blurred vision in the left eye and presence of a "dark spot in sight". She was consulted by the ophthalmologist, who, after eye examination of visual field and color vision, diagnosed retrobulbar neuritis of the left eye, prescribed antibiotics and referred the patient to a neurologist. Neurological examination showed no deviations. The MRI was also performed and revealed diffuse changes in the brain. After a few months, the patient was hospitalized at the Neurological Department, where MRA was performed, revealing vascular ischaemic changes. After ophthalmological consultation, the patient was referred to the Ophthalmologic Oncology Clinic with a diagnosis of "unusual choroid birthmark of the left eyeball". After an extensive ophthalmological examination conducted at Clinic (USG, perimetry, OCT, RNFL, FA, VEP), pre-existing embolism of ciliary-retinal artery was diagnosed.

Embolism of ciliary-retinal artery is a very rare cause of scotoma in the central visual field, but it should be taken into consideration in differential diagnosis. Only a full and proper examination, as well as cooperation between specialists can give a right diagnosis even in such infrequent cases like this one.

**Keywords: ciliary-retinal artery embolism, blurred vision, scotoma in the central visual field**

## Thoracic endometriosis syndrome – case report

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TES (thoracic endometriosis syndrome) is a rare disease characterized by the presence of endometrial tissue functioning in pleura, lung parenchyma, airways and / or diaphragm. TES small present with catamenial pneumothorax which occur within 72 hours before or after menstruation. It is one of the variants of thoracic endometriosis syndrome (TES) where in addition to edema can occur hemoptysis or nodules in the lung parenchyma. The most common emphysema takes over the right lung. To make the correct diagnosis, it should be taken into consideration that the occurrence of this rare disease relates to the association of menstrual cyclicity with pneumothorax. Approximately 250 cases have been described in the international literature so far.

A clinical case of a female patient with symptoms of TES.

51 years old female patient diagnosed with recurrent pneumothorax and pelvic endometriosis underwent videothoracoscopy at the age of 45 due to suspicion of endometrial foci in right lung apex. Histopathological specimens were collected and analysed with basic staining. Endometriosis was not confirmed. After few years specimens were reanalysed using Immunohistochemical staining. TES was confirmed.

TES is a rare and complex disease. Diagnosis may be a challenge both to clinicians and patomorphologists. Immunohistochemistry may be useful to confirm diagnosis. The syndrome should be suspected in women with ovulation, taking hormone replacement therapy combined with spontaneous pneumothorax even if the patient does not show clinical symptoms of endometriosis.

**Keywords: endometriosis, pneumothorax**

## **From neurology to gynecology: can broadening of stroke diagnostics lead to an improvement in rare ovarian cancer's prognosis?**

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The metabolism of neoplastic cells is perceived as the cause of atherothrombotic incidents in cancers since 19th century. Those incidents occur in 1-11% cancer cases. In clear cell carcinoma, accounting for 5% of ovarian cancers, the atherothrombotic incidents tend to occur 2,5 times more often. Clear cell carcinoma is diagnosed earlier and in younger age compared to other ovarian cancers. Usually the tumor is over 15 cm in diameter. The cancer is also characterized by drug resistance for standard treatment. A lower level of CA125 and difficulty in diagnosing the neoplasm makes CCC the second cause of death in oncological gynecology.

A 47-years-old patient was admitted to Obstetrics and Gynecology Clinic at Clinical Hospital of Medical University of Silesia to treat a tumor of right ovary. The tumor was detected a month before during the diagnostic of an ischemic stroke which occurred despite no risk factors being present. A laparotomy was performed and the tumor, left appendages and uterus removed. Metastases were presented on the urinary bladder, visceral and parietal pleura and greater omentum. Histopathological exam: adenocarcinoma clarocellulare (clear cell carcinoma, CCC). The patient was referred for further oncological treatment on 5th day after the surgery.

The oncological awareness needs to be kept in case of unexplained atherothrombotic incident. Interdisciplinary approach can improve patients' prognosis by diagnosing the cancer earlier.

**Keywords: ovarian cancer, clear cell carcinoma, atherothrombotic incident, stroke**



## **Ocular hemosiderosis- clinical diagnosis and electrophysiology.**

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Ocular hemosiderosis is caused by iron toxicity spreading to the eye because of a retained intraocular iron foreign body (that usually ends up there due to a trauma) or a retained intraocular hemorrhage. The iron deposition lasts in most parts of the eye, in most cases, it involves the posterior segment. Vitreal and retinal degeneration are the causes of irreversible vision loss.

A 49-year-old patient presented to the Clinic with advanced loss of visual acuity in the right eye (count fingers). He experienced a trauma while using a metallic hammer, 5 months after the event he visited an ophthalmologist, no foreign body was found. 11 months later he was examined by an ophthalmologist in our Clinic - a posttraumatic cataract was found. An USG was performed and a foreign body was detected in the posterior pole of the eye. The patient had electrophysiological tests done (VEP, PERG, ERG) where a typical for hemosiderosis b wave amplitude reduction was noticed. The patient underwent simultaneously a vitrectomy with foreign body removal and cataract surgery. No complications were observed. Due to long retinal exposure to toxic metal, there was no improvement in patient's visual acuity. Patient is regularly examined by an ophthalmologist.

Whenever a patient who has undergone a trauma seeks ophthalmological help, we must remember about taking the medical history (especially the details about the circumstances of the trauma). We should also focus on locating the foreign body that may be set in the eye. It is important to be very careful and precise with diagnosing the patient during their first visit as the consequences of inaccuracy may be crucial for their vision.

## **The role of imaging methods in 55-year- old woman with a frontal lobe glioblastoma multiforme (IV) - the case report.**

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Glioblastoma multiforme (GBM) is the most common and most malignant primary brain tumor in adults worldwide (25%) despite the progress in diagnosis and treatment in oncology. GBM develops slowly, symptoms vary depending on its location in the central nervous system. That's why it is important to perform appropriate diagnostic imaging next to the onset of symptoms, thus providing help for the neurosurgical and oncology treatment.

Presentation of the diagnostic path for glioblastoma patient without collateral diseases.

A 55- year- old woman had a first syncope incident during her holidays abroad. Computer Tomography (CT) of the chest, abdomen and mammography has not revealed any suspect lesion. Magnetic resonance imaging (MRI) of the head showed a high signal lesion (T2, FLAIR) with intensive edema in the left frontal lobe. Further diagnosis was continued in Poland where it confirmed the presence of the tumor in the left frontal lobe of the brain.

The tumor was resected via temporal craniotomy a month after diagnosis. A biopsy revealed diagnosis of glioblastoma multiforme (IV). In November 2016 after the biopsy, the patient received chemotherapy with Temodal (120 mg/day) and radiotherapy (60 Gy, 30 times). Control MRI has not shown new metastases.

Glioblastoma multiforme remains an important cause of morbidity and mortality from intracranial tumors. The overall prognosis depends on the time of imaging and surgery. However interdisciplinary therapy can significantly prolong postoperative survival.

**Keywords: Glioblastoma multiforme, intracranial surgery, diagnostic imaging, chemotherapy, radiotherapy**

## The onset of lower back pain in Takayasu arteritis in a 15 year old boy

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Takayasu arteritis (TA) is characterized as a large vessel granulomatous vasculitis causing massive intimal fibrosis and narrowing of the vessels. TA is typically seen in young adults of Asian descent, with predominance in females. In children, the disease manifests itself variously and non-specifically. We report a case of the unusual initial presentation of TA as lower back pain.

15 year old Caucasian male admitted to the hospital due to persistent severe pain in the lumbar area, occurring for the past two weeks. Symptoms of apathy, weight loss, and a subfebrile temperature were also present. A few weeks later, the patient complained of tightness behind the sternum lasting half-hour after exercising. Laboratory results determined elevated inflammatory biomarkers and anemia. Abdominal ultrasonography showed hepatosplenomegaly and cysts in the upper pole of right kidney. Results of the X-ray and magnetic resonance imaging of the lumbar spine were normal. The absence of pulse in the upper left limb and elevated arterial pressure in both lower limbs was noted. Thoracic and abdominal computed tomography angiography showed occlusion of left subclavian artery, left subclavicular artery, right common carotid artery, and an aneurysm of the abdominal aorta. Based on the clinical examination and imaging findings, the patient was diagnosed with TA.

The onset of TA in children could present with unspecific pain associated with systemic symptoms, elevated inflammatory biomarkers, and anemia. TA can easily be suspected by routinely examining the peripheral pulses. Modern-day imaging in the detection of TA may lead to an early diagnosis of the disease, allowing for proper treatment to be initiated.

**Keywords:** Takayasu arteritis (TA), large vessel vasculitis, children, lower back pain

## Problems of diagnosis of Ewing's sarcoma in an adult male patient

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Ewing's sarcoma is a primary tumor of soft tissues and bones of neuroectodermal origin, characterized by the high histological malignancy, resulting in a poor prognosis. This neoplasm occurs mostly among boys, with a predominance in Caucasians. The group of patients being 20 years of age and older represents only 10% of patients with Ewing's sarcoma. Dissemination of the disease at diagnosis is the most adverse prognostic factor.

A case of 26-year old man with disseminated form of Ewing's sarcoma is presented. First symptom of the disease was pain in the left shoulder that increased in the evening and was then accompanied by fever. Initially imaging examinations did not reveal any signs of malignancy, and the disease has been running imitating an inflammation. The patient manifested hematological abnormalities suggesting an acute leukemia. The final diagnosis was based on trephine biopsy with histopathological evaluation of bone marrow. Due to high advanced of the disease, despite the use of radiation therapy and cytostatic treatment, the course of the disease was fatal. Patient's survival has not exceeded 5 months since the onset of symptoms.

Ewing's sarcoma is a malignant bone cancer which occurs rare in adults and requires a careful and thorough diagnostic process. It can remain clinically silent for a long time, and occurrence of symptoms usually indicates an advanced disease. The results of laboratory tests and imaging are often uncharacteristic, suggesting inflammation or hematologic proliferative disease. In such cases, the bone marrow examination has a key role in making a diagnosis.

**Keywords: Ewing's sarcoma in adults, diagnostics, trephine biopsy**

**69- YEAR-OLD PATIENT WITH MARINE-LENHART SYNDROME - CASE REPORT.**

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Hyperthyroidism can be caused by Graves' disease (ca 60%), Plummer disease (ca 30%), Goetsch disease (ca 5%). Thyroid nodules coexist in about 25% to 30% patients suffering from Graves' disease. Most of them (95%) are hypoactive, but there are hyperactive nodules diagnosed as well. Coexistence of Graves' disease and hyperactive nodules is known as Marine-Lenhart syndrome, referring to 1% to 4% of patients with Graves' disease.

69-year-old male patient with coronary artery disease has been initially qualified for PCI. In preliminary studies reduced levels of TSH (0.005 mU/l; N = 0.27- 5 mU/L) were found out. In connection with suspected hyperthyroidism, further tests were commissioned. Ultrasound examination showed out focal lesions with the size of 2-5 mm. Peripheral blood tests proved elevated levels of free thyroid hormones (fT3, fT4) and antibodies against the TSH receptor (TRAK). The thyroid gland scintigraphy revealed the presence of partially decompensated autonomous nodule within the right lobe. On the basis of previous tests and hyperthyroidism symptoms, the patient was diagnosed with Marine-Lenhart syndrome. The patient was treated with antithyroid agents and finally the treatment with radioiodine (I-131) was carried out. Clinical and laboratory markers of hyperthyroidism subsided, and the patient was qualified for PCI.

The Marine-Lenhart syndrome is a rare cause of hyperthyroidism. In the case of Graves' disease with concomitant nodules, it should always be taken into consideration. With differentiation, useful test is the thyroid scintigraphy (131-I). The best method of treatment seems to be radioiodine therapy (131-I).

**Keywords: Marine-Lenhart syndrome, radioiodine therapy (131- I), hyperthyroidism, PCI**

## More than meets the eye – in search of causes of acute kidney injury

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The definition of acute kidney injury (AKI) in children comprises pediatric RIFLE criteria, defining subsequent stages of renal insufficiency (Risk, Injury, Failure, Loss, End stage kidney disease). The spectrum of anomalies spreads from slight decrease in the value of glomerular filtration rate until the requirement of renal replacement therapy. The time factor is essential for this assessment – once the features of kidney injury persist over 3 months, the criteria of chronic kidney disease are fulfilled.

A 6-year old girl has suffered from four incidents of acute kidney injury caused by dehydration. The primary anomaly, responsible for all episodes of AKI, was the uncontrollable abundant vomiting, inadequate to the volume of taken fluids. This anomaly was present in the patient since the third month of life. The gastroenterological examination in infancy gave no explanation – no anatomical or functional abnormalities, except for peptic ulcer, were diagnosed. The psychic cause of vomiting was also eliminated. Finally, after another episode of projectile vomiting, the complex anomaly of the gastrointestinal tract (narrowing of the duodenum, intussusception of the small intestine and intestinal malrotation) was diagnosed and operated. After the surgery vomiting has never recurred but the recurrent episodes of dehydration and renal function impairment have resulted in chronic kidney disease.

Repetitive injury may cause persistent damage to the renal parenchyma and irreversible loss of kidney function. Recurrent episodes of acute kidney injury, triggered by the same factor, require detailed and holistic diagnostics.

**Keywords: nephrology, acute kidney injury, chronic kidney disease**

## **Characteristic elements of the skull bone in the Team Simpson-Golabi-Behmela imaging tomography wolumetrycznej- a case raport**

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Simpson-Golabi-Behmel Syndrome is classified as a team hypertrophy. Radiographic examination technique volumetric tomography allows imaging of structures studied hard in three planes.

The use of CBCT volumetric tomography to evaluate topographic bony structures of the skull in the rare case of Team Simpson-Golabi-Behmela.

The study evaluated bone structure of the skull in a volumetric tomography (CBCT) in a patient, 40 years old. We evaluated the size and topography of the different anatomical structures of the head, in particular the jaw bone, jaw and temporomandibular joint.

Instrumental advantage of CBCT is the possibility of a three-dimensional image reconstruction, which gave unlimited perspective insight into the topography of the bone structure of any page.

**Keywords: Simpson-Golabi-Behmel Syndrome, Volumetric tomography**

## **The use of volumetric tomography to evaluate the effectiveness of led therapy in physiotherapy to treat inflammation of the maxillary sinus - a case report**

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Volumetric Tomography is one of the most modern radiological techniques. Magnetoledoterapia is a combination of electromagnetic field and light emitted from the high-energy LEDs.

The use of a volumetric CT to assess the effectiveness led therapy in physiotherapy in the treatment of inflammation of the maxillary sinus.

The study assesses the usefulness of CT volumetric efficacy analysis led therapy. Physical procedures were performed in 45 year old female patient aim regeneration inflammation of the maxillary sinuses.

Positive outcomes have been confirmed volumetric CT imaging and laser testing the temperature on the surface of the skin facial skull.

**Keywords: Led therapy, Volumetric tomography**



## **Neurobehavioral disturbances in a patient infected with the *Tropheryma whipplei* bacterium – case study**

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Whipple's disease is a very rare infectious systemic disease which affects approx. 0.01% of the population. The incidence in the world is approx. 30 people per year and 98.5% of the patients represent Caucasian population. This disease is approx. 8 times more common in men than in women, usually in people aged 40-50 years. Transmission of the *Tropheryma whipplei* bacterium, a gram-positive bacilli causing the development of disease symptoms, is not fully understood. Some authors noticed genetic predisposition and acquired immunological predisposition, increasing susceptibility to illness. The disease has no specific symptoms and its clinical course may be similar to many other diseases of the gastrointestinal tract.

The case of Whipple's disease in 54-year old patient has been described in comparison to the other reported in neurological journals.

In 2010 the patient was diagnosed with Whipple's disease. In 2013 he was admitted to the Department of Neurology of the Central Clinical Hospital in Katowice due to deteriorating of general and clinical condition and neurological disturbances. The patient showed apathy, sleep and memory disorders. Moreover the typical neurological symptoms indicating of CNS involvement was observed. The patient was discharged after therapy with antibiotics.

Because Whipple's disease is a very rare disease, each recorded case is valuable clue for clinicians during diagnosis of gastrointestinal tract disease.

**Keywords:** Whipple'a disease, *Tropheryma whipplei*

## **Haemophagocytic syndrome and myeloid sarcoma in the case of 15 years old boy- difficult diseases and simple test that can save one's life.**

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Haemophagocytic syndrome (HLH) is a rare disease with severe hyperinflammation due to uncontrolled proliferation of immune cells. Pancytopenia in peripheral blood and hemophagocytosis in bone marrow may be revealed. Markedly elevated serum ferritin level is sensitive and specific for HLH diagnosis, especially in paediatric population. Without the therapy, mortality rate in HLH equals 100%. In October 2015, a 15-years old boy was referred to SUM clinic with suspicion of leukaemia. In medical history- non-productive cough, high fever resistant to antibiotics. During hospital examinations: splenomegaly, pancytopenia, hyperferritinemia, elevated inflammatory and hepatic markers. Due to preliminary diagnosis of HLH, the boy received immunoglobulin, but his condition got worse. With cardiopulmonary failure he was transferred to the intensive care unit. HLH-2004 chemotherapy was implemented and was continued for 29 weeks till doctors found reddened tubercle over the costal arch. In histopathology- Myeloid sarcoma- very rare extramedullary manifestation of acute leukaemia or myelodysplastic syndrome. HLH-2004 protocol was exchanged with AML-BFM-2012. Chemotherapy was complicated by bone marrow aplasia and required intervals, but it was finished and finally the boy was discharged home in good condition. „Cytokine storm syndrom” is still a non-well-known disease, often misdiagnosed with septic shock, while marking the serum level of ferritin may easily differ these conditions. A proper recognition leads to an effective treatment and saving patient's life. A strict control and individualisation of the therapy is required as it was highlighted in the presented case.

**Keywords: Haemophagocytic syndrome, myeloid sarcoma, ferritin, cytokine storm**

## **Pneumothorax as a complication of home non-invasive ventilation**

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Non-invasive ventilation (NIV) is one of the biggest developments in respiratory medicine in recent decades. Home NIV (HMV) improves survival and quality of life in COPD patients. Although safer than invasive ventilation, NIV is not free from potentially lethal complications such as pneumothorax (PTX). Despite the fact that such condition is rare, in our clinic there were 3 patients with PTX within 4 months last year.

A 60 year old cachectic woman with severe COPD and history of tuberculosis was in the previous 18 months on HMV. On admission she presented with increased dyspnoea and exercise intolerance. The patient reported no infection symptoms. The chest X-ray showed right sided PTX with completely collapsed right lung. Installed drainage with suction allowed full lung reexpansion and the drain was removed after 4 days. To prevent recurrence of PTX HMV was temporarily stopped but in 2 weeks next PTX occurred which was followed by 2 more episodes within next 2 months. All of them were drained. During the last episode severe exacerbation of respiratory failure occurred and NIV was restarted successfully. After 10 days PTX resolved and since then, 8 months as far, she is stable without any signs of recurrence.

PTX has to be considered in patients on NIV, especially in those with cachexia and impaired lung tissue, e.g. COPD. Typical symptoms are sudden deterioration and dyspnoea. PTX should be urgently treated with a chest drainage and NIV can be safely continued to prevent severe acidosis.

## **Palmoplantar keratoderma- a therapeutic challenge**

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Palmoplantar keratodermas (PPK) are a various group of genodermatoses, characterized by chronic hyperkeratosis of the skin of palms and soles. We can distinguish such forms of PPK as hereditary, acquired, isolated and connected with other skin or systemic disorders. Hereditary PPK is considered when an early onset and positive family history is present. Clinical spectrum of PPK ranges from pure PPK – restricted to skin abnormalities to forms accompanied by various symptoms like dental anomalies, problems with vision or cancer. Acquired PPK can be related to e.g. cancer, keratoderma climacterium, pregnancy, psoriasis. The aim of this presentation was to present a case of 18-years-old patient, admitted to Department of Dermatology Medical University of Silesia in Katowice. The main reason of this hospitalization was making the right diagnosis and establishing the treatment. PPK has appeared in the early months of her life. Her palms and soles are covered by diffuse, hyperkeratotic changes on erythematous background with exfoliation. She suffers from hair loss without any changes in her scalp. PPK has a huge impact on patient's frame of mind, significantly lowers physical and mental health. The initial treatment was based on topical keratolytics and next on UVA phototherapy. After that patient was ordered acitretin (25mg/d). Slow regression with barely visible effects were obtained. PPK treatment still remains a serious therapeutic problem. New approach must be implemented to achieve full recovery and permanent improvement of patient's life. We may have particular high hopes for molecular treatment, including siRNA using.

**Keywords:** Palmoplantar keratoderma

## **Hybrid-Aphasia after ischemic stroke in MCA area – case study of the poli-lingual patient.**

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Hybrid-Aphasia (also called Crossed-Aphasia) is neurolingual/speech disorder, caused by damage of the non-dominant hemisphere. The symptoms are similar to motor aphasia and sensoric aphasia. In the right hemisphere bigger substantia alba disturbances than in left hemisphere are noticed. Moreover, stronger and more frequent speech difficulties are observed (3% in right-hand to 25% in left-hand patients). The symptoms back away faster, than in typical aphasia. Hybrid-Aphasia more frequent occurs in the left-handed persons.

Aim of the thesis: The study presents patient's with Hybrid-Aphasia after ischemic stroke who used three languages to communication before stroke. His disease's history was compared with other cases reported in neurological scientific journals.

This case study of the left-handed patient after ischemic stroke (MCA area), that lost his ability to use the aquired language. His native language was arabic, and aquired languages were Polish and English. After the ischemic stroke he lost ability to use the aquired languages, but his still could communicate only in a bit limited rate in native language.

In comparison to the other cases with Hybrid-Aphasia, the presented patient's history suggests, that damage in non-dominant hemisphere has less serious course (aphatic disturbances are less specific and generally less heavy). What is important, rehabilitation is more effective, than in patient with a typical aphasia.

**Keywords: aphasia, crossed aphasia, speech, stroke**

## From surgeon to paediatrician - case report of congenital neutropenia.

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Chronic neutropenia is a quantitative neutrophil granulocytes disorder occurring as its lower count. Autoimmune neutropenia (AIN) is the main cause of neutropenia of the children up to age of 4 and it's usually diagnosed between age of 5 months and 5. The common symptoms are recurrent infections of upper respiratory tract (URI), skin, subcutaneous tissue and Urinary Tract.

6 years old boy was admitted to the Immunology Ward to the purpose of immunodeficiency diagnostics. Patient's mother reported 2 episodes of abscesses (at the age of 1 and 2), both treated surgically, and recurrent URIs. In the February of 2014 he had an emergency operation caused by segmental necrosis of the colon of unknown etiology, which led to septic shock with MODS. The laboratory tests, run while patient stay at the Immunology Ward, showed profound granulocytopenia in the complete blood count with impaired phagocytosis and metabolism of granulocytes. At the 5th day of staying at patient's left thigh medial surface the abscess was observed which was treated by the use of antibiotics. In patient's plasma has been found anti-granulocyte IgM antibodies. Based on patient's history and laboratory tests the diagnose of congenital neutropenia was given. Patient is currently receiving immunomodulatory therapy and he's being controlled at the clinic.

Recurrent episodes of infections among children, especially of the URT, skin and subcutaneous, can be connected with immunodeficiency which should be considered among patients with such symptoms. Early diagnose of the disease is essential, because it allows to apply proper therapy, which improves their quality of life.

**Keywords: immunodeficiency, recurrent respiratory infections, abscesses**

**Is Postural Orthostatic Tachycardia Syndrome (POTS) causing the fatigue in Marfan Syndrome (MFS)? A case report of POTS coexisting with mixed vasovagal syndrome (VVS) in a patient with MFS, thoracic aortic aneurysm and chronic fatigue syndrome (CFS).**

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Fatigue occurs in 70% of patients with MFS. POTS remains largely underdiagnosed but when directed studies are conducted POTS is recognized in 40% of patients with CFS. Moreover, in one study POTS occurred in 80% of patients with Ehlers–Danlos' syndrome, a similar to MFS genetic connective tissue disorder. However, to this date fatigue in MFS was usually associated with tall posture and dysfunction of the heart valves and only few reports suggested possible contribution of orthostatic intolerance and autonomic dysfunction.

To report on first case of POTS diagnosed in a patient with MFS and CFS, as well as to provide a possible explanation and to discuss the challenging treatment.

We present a case of 30-year-old male with MFS, complicated by aortic aneurysms and dissections, coexisting POTS and mixed vasovagal syndrome, as well as hypertension and II° type I atrioventricular block. The patient reports daily orthostatic presyncope and rapid fatigue. Physical examination recognized typical MFS body with Ghent Systemic Score of 7.

A 15-minute active verticalization test was used to diagnose POTS (heart rate rise of 35/min, with mild blood pressure elevation, progressive fatigue and acrocyanosis) while tilt table testing revealed underlying mixed VVS. In Multidimensional Fatigue Inventory (MFI-20) the patient scored higher in all categories except Mental Fatigue. Psychological analysis showed no signs of depression or anxiety.

This is the first report linking CFS in MFS with POTS. We conclude that patients with MFS should undergo targeted tests for POTS and the vasovagal syndrome especially those presenting with fatigue.

**Keywords:** Marfan syndrome, POTS, connective tissue disorder, dysautonomia

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

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

**Keywords: Mantle Cell Lymphoma, HCV, chemotherapy, B-cell**