iMEDIC

# iMEDIC 2019 | Bydgoszcz

4th International Medical Interdisciplinary Congress

Medical, Pharmaceutical and Health Sciences

1st June | Bydgoszcz, Poland

# Abstract Book

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*Huge thanks for every participants that took part in the Fourth International Medical Interdisciplinary Congress – iMEDIC 2019! Without you the congress would be empty, thanks to you it was alive. Full of knowledge and mutual understanding.*

*Big thanks for every and each person that gave it all while participating in the Organizing Committee, once again, for the fourth time, we created something small but also great – something that allowed so many people to meet and share knowledge.*

*We – young people – are the foundation of future, modern science, always remember that wherever we go, cooperation of Medical, Pharmaceutical and Health sciences should be our main task.*

*Below, we would like to present every single presentation and poster, which was presented during the conference.*

*It is a time for us to slowly start the preparations for the fourth edition of iMEDIC Congress, work in the name of science never ends, does it? As for you, dear participants, rest, gain strength and get back to research! We hope to see next time at the* ***5th International MEDical Interdisciplinary Congress – iMEDIC 2019****.*

*We cannot wait to see what you will prepare!*

*The Organizing Committee*
**iMEDIC 2019**

# Medicine Sciences Block

**Jury:**

dr hab. n. med. Michał Wiciński

dr Bartosz Malinowski

dr hab. n. med. Katarzyna Pawlak-Osińska

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**Moderator:**

Dominika Ciecierska

Stian Gulestø

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**Title:** Histopathological studies on kidney allograft biopsies from kidney recipients with previous BK viraemia

**Authors:** Agata Salabura, Jakub Rosik, Kamil Brodowski, Michał Krzysztofik

**Session:** Medicine 1 (Anaesthesiology, Intensive Care & Emergency Medicine, Basic & Preclinical Science, Genetics & Molecular Biology)

**Introduction:**
Latent infection with polyoma-BK virus (BKV) is common in general population. Consequences in immunocompetent patients are infrequent. However immunosuppressed hosts including kidney recipients are endangered to virus reactivation which can imply severe clinical consequences such as BK nephropathy and kidney allograft dysfunction. Allograft biopsy remains a golden standard in BK nephropathy diagnostics. BK nephropathy is mostly characterized by interstitial inflammation which mimics other sort of allograft pathology. Nevertheless only 1 to 10% kidney fully develop BK nephropathy. Most of BK reactivation cases are revealed either by BK viruria or BK viraemia.

**Aim of the study:**
Analysis of changes in kidney allograft biopsies from recipients with previously confirmed BK viraemia versus biopsies from non-BK patients.

**Material and methods:**
We investigated two groups of patients after kidney transplantation in whom biopsies were performed between 2010 - 2018 in Clinic of Nephrology, Transplantation and Internal Diseases Pomeranian Medical University in Szczecin (PMU). Group 1 - 62 patients in whom viraemia was confirmed and measured in Diagnostic Immunology Department PMU between 2010-2018 (BK+); group 2 - control group of 53 patients with no confirmed BK infection history (BK-). Groups were identical according to recipient age, donor age and donor sex. The analysis included Banff classification parameters: tubular atrophy, tubulitis, intimal arteritis, peritubular capillaritis separately as well as complete histopathologic diagnoses: calcineurin inhibitor toxicity and chronic allograft nephropathy (CAN). Value of every estimation was compared by Mann-Whitney U test and Fisher test using RStudio programme.

**Results:**
In BK + group a diagnosis of calcineurin inhibitor toxicity and CAN were more common than in a control group ($p<0.01$ and $p=0.001$). Statistically significant differences between both groups were also observed regarding following parameters: endarteritis, tubulitis, tubules atrophy and peritubular capillarities. Additionally the intensity of peritubular capillaritis indicated by the number of luminal inflammatory cells was significantly higher in patients with viraemia load over 10 000 copies/ml ($p=0,04$).

**Conclusions:**
Previously occurring BKV viraemia in kidney recipients affects the number of luminal inflammatory cells which indicates an ongoing active process of peritubular capilaritis. This is dependent on the occurrence of viraemia itself and the intensity of virus replication. History of BK virus reactivation may possibly bias the interpretation of histopathological image of kidney allograft.

**Title:** Determining the Effects of Reproductive Performance on Bone Quality in Female House Mice

**Authors:** Kayla Frey; Wendy Hood Ph.D.

**Session:** Medicine 1 (Anaesthesiology, Intensive Care & Emergency Medicine, Basic & Preclinical Science, Genetics & Molecular Biology)

**Introduction:**
Much of calcium and phosphorus used to support skeletal ossification during prenatal and postnatal mammalian development are derived from the mobilization of maternal bone minerals. As a result, bone loss has been observed in the maternal skeleton during the reproductive cycle. In order to maintain their skeletal integrity, ensure survival, and continue future reproduction, mothers must be able to prevent excessive bone loss due to reproductive bone mobilization.

**Aim of the study:**
The goal of our research was to evaluate how the number of reproductive bouts and the total number of young produced impacts bone quality in female mice.

**Material and methods:**
We evaluated this relationship by quantifying variation in femur morphology and mineral composition of 14 age-matched mice that had the opportunity to breed from reproductive maturity at 2 months until they were 10 months of age. To evaluate femur morphology, we sent one set of femurs to the University of Alabama at Birmingham to quantify the 3D structure of the bones. We quantified the total mineral and calcium content of the bone by inductively coupled plasma spectrophotometry.

**Results:**
Regression analysis established no significant relationship between bone morphology and reproductive performance or between bone mass and mineral content for females that had between zero to seven litters and that vary between weaning 0-44 offspring. These results suggest that female house mice are adept at maintaining bone mineral content and mass throughout their reproductive cycle.

**Conclusions:**
The results of this study contradict the initial hypothesis that a small mammal with a much smaller skeleton would experience bone loss with an increase in reproductive output if bone mobilization occurred. This suggests that wild-derived house mice in semi-natural conditions experience no significant loss of female skeletal integrity after reproduction. If bone loss does occur, skeletal maintenance may be compensating for the increase in bone mobilization during reproduction. If these mice can maintain their skeletal integrity during reproduction or quickly recover their bone quality postpartum, they decrease the risk of bone fracture and susceptibility to predators. This mechanism would be most efficient under natural conditions, where mice experience sufficient strain to stimulate full compensation for the bone loss experienced during the reproduction. Because the mice in this study were kept in semi-natural conditions, the stress and strain experienced by the animals would have been greater than mice kept in a small rodent box. Therefore, by studying wild-derived animals, our results have broader application than experiments conducted under laboratory settings. Future studies should emphasize utilization of a larger sample size, and should evaluate which variables affect reproductive bone loss and to what extent. These variables may include exercise, dietary mineral intake, and presence of disease.

**Title:** Sepsis - the silent killer. The analysis of emergency medical services management.

**Authors:** Ksenia Pawlas, Anna Sikorska, Katarzyna Nykiel

**Session:** Medicine 1 (Anaesthesiology, Intensive Care & Emergency Medicine, Basic & Preclinical Science, Genetics & Molecular Biology)

**Introduction:**
Sepsis is a potentially life-threatening condition. If untreated, sepsis leads to septic shock and multiple organ dysfunction syndrome (MODS) with high mortality rates. Most lethal cases can be prevented by early diagnosis and prompt implementation of Surviving Sepsis Campaign (SSC) frameworks.

**Aim of the study:**
The paper's aim is to determine causes of adverse health events in sepsis shock diagnosis and management in primary care facilities, emergency services & emergency rooms.

**Material and methods:**
Retrospective analysis of 16 medico-legal opinions issued by the Wroclaw Department of Forensic Medicine in 2005-2017 in cases examined for medical errors in sepsis treatment, including complete medical records.

**Results:**
16 patients ranging in age from 3 months to 74 years; 5 children; 3 women. All of the said cases resulted in death. Sepsis was diagnosed in pre-hospital care in only 6 cases. 14/16 patients had prior local infection symptoms: upper respiratory tract infection (8), pneumonia (8), urinary tract infection (3), meningitis (1), cellulitis (1). Antibiotics were administered in 10 cases, but first contact to administration time was longer than 1 hour in 5 cases. Fluid resuscitation was implemented in 4 cases. In 7 situations time between noting sepsis symptoms & hospital admission was longer than 24 hours. Laboratory tests were ordered in 10/16 cases; and 10/10 indicated MODS. The consulting team ruled that medical errors had been made in 9/16 cases. Most frequently diagnostic (9/9), decisionmaking (9/9) and therapeutic (7/9). The person responsible was the ER physician (8), Emergency Medical System doctor (5) or general practitioner (4).

**Conclusions:**
Delay in identifying sepsis, administering fluid resuscitation and broad-spectrum antibiotics drastically lessen survival rates in sepsis. Most errors can be prevented by precise medical history taking and physical examination with special focus on respiratory & circulatory insufficiency symptoms, mental state alteration, hypotensia & tachypnoea. One should always rule out sepsis in patients who have recently had a minor or untreated infection and present with abovementioned symptoms. To improve septic patients' safety it is crucial to promote current SSC bundle guidelines and appropriate antibiotic use.

**Title:** INFLUENCE OF TRANSFORAMINAL EPIDURAL CORTICOSTEROID INJECTION VOLUME ON PAIN RELIEF IN INDIVIDUALS WITH CHRONIC UNILATERAL LUMBAR RADICULAR PAIN

**Authors:** Lubova Minova, Mihails Arons

**Session:** Medicine 1 (Anaesthesiology, Intensive Care & Emergency Medicine, Basic & Preclinical Science, Genetics & Molecular Biology)

**Keywords:**
Unilateral lumbar radicular pain, transforaminal epidural steroid injection, Numeric Rating Scale, Likert scale.

Introduction: The prevalence of chronic lumbar radicular pain (LRP) in individuals with low back pain is lie between 13 % and 30 %. Transforaminal epidural corticosteroid injection (TFESI) are commonly used to treat LRP. The influence of TFESI volume on pain relief in patients with chronic unilateral LRP has not been fully investigated.

**Aim of the study:**
To compare the influence of a low-volume injection – 2 ml (Sol. Triamcinoloni acetonidum 40 mg/ml + Sol. Bupivacaini hydrochloridum 5 mg/ml) with a high-volume injection – 4 ml (using the same corticosteroid and bupivacaine dose + Sol. NaCl 0.9 % 2 ml) on pain relief in individuals with chronic unilateral LRP.

**Materials and methods:**
A five months prospective study was carried out at Medical Centre D.A.P. Pain Clinic in Riga, Latvia. Fourteen individuals with chronic unilateral LRP were randomly distributed into 2 groups: high-volume injection group (n = 7) and low-volume injection group (n = 7). Numeric Rating Scale (NRS) and Likert scale were used to evaluate posttreatment efficacy 4 weeks after the procedure.

**Results:**
Significant pain relief were achieved in both groups after the procedure ($p < 0.05$), but there was no significant difference in NRS scores between two groups ($p = 0.8446$). On average, the NRS score in both groups decreased by 4 points. The overall status of low-volume group improved by 58.6 % after the procedure, but for high-volume group – by 51.1 %. There also was no significant difference in Likert scale scores between two groups ($p = 0.5594$).

**Conclusions:**
This study has demonstrated the TFESI efficacy on pain relief in individuals with chronic unilateral LRP, however, there was no significant influence of injection volumes.

**Title:** Assessment of the epidural anaesthesia

**Authors:** Mikołaj Dyrda, Artur Fabijański, Karolina Socha, Anna Kluzik PhD, Agnieszka Gaczkowska PhD

**Session:** Medicine 1 (Anaesthesiology, Intensive Care & Emergency Medicine, Basic & Preclinical Science, Genetics & Molecular Biology)

**Introduction:**
Post-laparotomy pain is often difficult to control and can have a harmful effect on patients recovery. For this reason, apart from traditional intravenous access, epidural catheters are increasingly used as an access to a 24-hour pain reliever.

**Aim of the study:**
Assessment of the use of catheters for epidural anaesthesia during large abdominal operations.

**Materials and methods:**
Retrospective cohort study of patients who underwent a laparotomy in the period between December 2018, and February 2019 in the Heliodor Święcicki Clinical Hospital of the Poznań University of Medical Sciences. We compared the results of treatment in the group of 97 patients: 50 male and 47 female, average age 63 (SD 13) years. 26 patients received bupivacaine, 9 ropivacaine and 61 of them had no epidural anaesthesia.

**Results:**
The study showed that patients without epidural anaesthesia received intraoperatively the largest amount of fentanyl. Group with ropivacaine got it least likely, the same group noticed the smallest growth of WBC and CRP level. However these results were statistically insignificant. In a group of patients which got bupivacaine, or ropivacaine only 2 patients received oxynorm, while in a group without epidural anaesthesia almost 57% of patients got this drug during operation.

**Conclusions:**
Treatment of postoperative pain using epidural anaesthesia is effective. Patients required less intravenous analgesics. Probably analgesic treatment has an impact on the developing inflammation, but more studies are required on a larger number of patients.

**Title:** When a child reports to the eye emergency departament - analysis of the symptoms, administered treatment and recommendations given.

**Authors:** Aleksandra Borys, Karolina Broda, Gotz-Więckowska A., MD, PhD; Chmielarz-Czarnocińska A., MD

**Session:** Medicine 2 (Neurology & Psychiatry & Neurosurgery, Otolaryngology& Ophthalmology)

**Introduction:**
The eye emergency department of Ophthalmology Clinic of University Clinical Hospital no. 1 in Poznań started to admit the patients complaining of acute ocular symptoms in November 2017. There had been no study focused on the epidemiology of ocular diseases in children presented in the eye emergency room yet.

**Aim of the study:**
1. To analyse the reasons of referrals of the patients under the age of 15 to the eye emergency department. 2. To determine the type of services provided. 3. To define the age range of children presenting most frequently to the eye emergency department.

**Materials and methods:**
A retrospective study included 537 patients up to the age of 15 who attended the eye emergency department of Ophthalmology Clinic of University Clinical Hospital no. 1 in Poznań between November 2017 and February 2019.

**Results:**
250 girls and 287 boys aged from 10 days to 15 years of age (average age - 6 years) attended the eye emergency department. Children up to 1 year of age constituted 13.4% of patients reporting, patients between 1 and 3 years of age. 21.8%, between 4 and 7 years of age - 28.7%, the largest group consisted of the patients between 8 and 15 years of age - 36.1%. Injuries were the cause of 71 referrals (13.2%), of which 5 (0.9%) required admission to the ophthalmology department for surgical treatment. The patients most frequently complained of the redness of the eye, discharge (mainly purulent) and eye pain. The most frequently diagnosed condition was conjunctivitis, it was diagnosed in 218 patients (40.6%). In 51 patients (9.5%) stye or chalazion occurred. The next most common diagnoses were: foreign body in the eye (8.6%), eye and orbital trauma (8.6%), inflammation, erosion or other corneal disorders (7.6%). Twenty-six patients (4.8%) requiredhospitalization, of which only four in the ophthalmic ward (0.7%). 50.2% (270 patients) were directed to an ophthalmologist for a check-up or to conduct a planned refraction examination. 38 patients (7%) were referred to the ophthalmic clinic for children under 3 years of age. Forty patients (7.5%) required the consultation of another specialist. Most often, in 45% of cases (18 patients) it was a neurological consultation.

**Conclusions:**
1. Patients under 15 years of age reported to the eye emergency department most often for non-traumatic reasons. 2. The dominant diagnosis was conjunctivitis. 3. Patients usually received outpatient counseling, five of them required surgical treatment. 4. The most common recommendation was mandatory control in the outpatient ophthalmic clinic. 5. The most numerous group among the patients were the children aged 8 to 15 years.

**Title:** The effect of proxymetacaine on the corneal thickness and the intraocular pressure value.

**Authors:** Anna Nowak, Dominika Miszewska, Łucja Niezgoda, Marta Korsak

**Session:** Medicine 2 (Neurology & Psychiatry & Neurosurgery, Otolaryngology& Ophthalmology)

**Introduction:**
Proxymetacaine drops are commonly used for anaesthesia during various ophthalmic procedures, including contact tonometry, which is essential in diagnosis and treatment of many ophthalmic diseases, e.g. glaucoma.

**Aim of study:**
To investigate the possible changes in the central corneal thickness (CCT) induced by the application of proxymetacaine and its influence on the intraocular pressure value (IOP).

**Material and methods:**
As yet, 34 volunteers without any diseases possibly affecting CCT, IOP or both have been involved in this prospective study. Air-puff tonometry and pachymetry were performed. Three consecutive measurements were done in this study. The first one taken immediately before the drug administration (Alcaine Eye Drops 0.5% Proxymetacaine Hydrochloride), the second- 2 minutes after, and the third- 15 minutes after the application. The statistical analysis was performed with the Student's paired t-test. The study is still ongoing, at least 25 more individuals are to be tested by the end of April.

**Results:**
The change in the CCT overtime is statistically insignificant ($p>0.05$). Differences between initial and post-anaesthetic corrected IOP were found. The mean change in the corrected IOP values differed among consecutive measurements. Statistically significant reduction of both corrected and raw IOP 2 minutes ($p<0.001$) and 15 minutes ($p<0.001$) after the drug administration were found, in comparison to the initial IOP values.

**Conclusions:**
According to the study, the use of proxymetacaine appears to have influence on the results of the IOP measurements. However, due to the statistically insignificant variations in CCT, different mechanism inducing the change should be considered.

**Title:** EFFECT OF SINGLE ANODAL TRANSCRANIAL DIRECT CURRENT STIMULATION ON PAIN RELIEF IN INDIVIDUALS WITH CHRONIC PERIPHERAL NEUROPATHIC PAIN

**Authors:** Dmitrijs Glazunovs, Ināra Logina, Ilja Noviks, Einars Kupats

**Session:** Medicine 2 (Neurology & Psychiatry & Neurosurgery, Otolaryngology& Ophthalmology)

**Keywords:**
Trancranial direct current stimulation, neuropathic pain, Numeric Rating Scale, Neuropathic Pain Symptom Inventory.

**Introduction:**
Prevalence of neuropathic pain is about 10 % of the general population. Neuropathic pain is largely refractory to medications. Brain stimulation techniques have the potential in the treatment of neurological and psychiatric conditions. Transcranial direct current stimulation (tDCS) is a noninvasive brain stimulation procedure that thave the potential for treating neuropathic pain (NP).

**Aim of the study:**
To evaluate effect of single anodal tDCS over left primary motor cortex (M1) on pain relief in individuals with chronic peripheral NP.

**Materials and methods:**
An ongoing prospective study carried out at Neuroimmunology and immunodeficiency centre in 2018/2019 academic year in Riga, Latvia. Seventeen participants with chronic peripheral NP were randomly allocated to either the active (n = 12) or sham (n = 5) tDCS group. Participants received either active (2 mA anodal current) or sham tDCS over the left M1 for 20 minutes. Before and 24 hours after the stimulation, participants were evaluated using Numeric Rating Scale (NRS) and Neuropathic Pain Symptom Inventory (NPSI).

**Results:**
Both the sham and active tDCS resulted in decrease in the NRS and NPSI 24 hours after stimulation, but the results from this study show, that NRS reduction rate was not significant in both groups. However, NPSI reduction rate was significant only in active tDCS group (35.5 %, p = 0.0071).

**Conclusions:**
Single anodal tDCS over left M1 can reduce pain level in individuals with chronic peripheral NP, however, there is minor placebo effect that is not significant. NPSI is more sensitive and detailed scale to evaluate the different symptoms of neuropathic pain.

**Title:** Evaluation of γδT lymphocyte subpopulation in patients with multiple sclerosis treated with natalizumab.

**Authors:** Izabela Morawska, Michał Zarobkiewicz, Dominika Cieślak, Adam Michalski, tutor: dr hab. n. med. Agnieszka Bojarska-Junak

**Session:** Medicine 2 (Neurology & Psychiatry & Neurosurgery, Otolaryngology& Ophthalmology)

**Introduction:**
Multiple sclerosis is a chronic neuroinflammatory disease affecting many young adults. The inflammatory response lead demyelinization and it is the reason of severe symptoms and sings of the disease. Pathogenesis is not yet fully understood, however, researchers have found that some subpopulations of T lymphocytes can cross the blood-brain barrier, produce and excrete cytokines. Natalizumab, monoclonal antibody against the cell adhesion molecule α4-integrin, is believed to work by reducing the ability of inflammatory immune cells to attach to and pass through the blood–brain barrier.

**Aim of the study:**
The aim of the study was to investigate and compare the percentage of γδT subpopulations in peripheral blood of natalizumab-treated multiple sclerosis patients in relation to the healthy control.

**Material and methods:**
The study involved 15 people, 5 of them were diagnosed with relapsing-remitting multiple sclerosis and 10 of them were healthy controls. All the patients were at the time of relapse. Blood samples were collected from them, stained with anti-human CD3, CD4, IL-17, TCRγδ, Vδ1 TCRγδ, Vδ2 TCRγδ, CCR6, CD161, CD31 antibodies and analyzed by flow cytometry. Results were statically analyzed using R. Kruskal-Wallis test was used to investigate statistical significance.

**Results:**
No significant difference was seen in the overall γδT lymphocytes percentage, but also in the percentage of Vδ1+ γδT, Vδ2+ γδT, as well as in the expression of IL-17, CD31 and CD161 among those three subpopulations.

**Conclusions:**
Presented above are the preliminary results of a study that is still ongoing. The lack of significant results may be due to the low number of patients included. Moreover it may also be connected with the overall discrepancy of γδT cells in multiple sclerosis – various groups presented opposing results about the percentage of total γδT lymphocytes in peripheral blood of multiple sclerosis patients.

**Title:** Metamotphopsis - sensitivity and specificity of diagnostic tests.

**Authors:** Przemysław Zabel, Katarzyna Zabel, Katarzyna Urtnowska-Jopek, Kosma Kołodziej

**Session:** Medicine 2 (Neurology & Psychiatry & Neurosurgery, Otolaryngology& Ophthalmology)

**Introduction:**
Metamorphopsia is one of the most important symptoms occurring in eyes with macular disease. Many patients complain about seeing distorted objects. Objects appear to be broken or wavy, which makes it difficult for patients to function properly in the environment. The detection of these changes may indicate a progressive clinical change in macular diseases and the need to implement treatment. Therefore, the use of an appropriate method for the detection of metamorphopsis seems to have a great diagnostic value

**Aim of the study:**
The aim of the study was to asess the sensitivity and specificity of tests diagnosing metamorphosis

**Material and methods:**
225 patients (398 eyes) were examined. An ophthalmologic examination was performed for each patient, including assessment of the presence and degree of metamorphopsy and examination of the anterior and posterior part of the eye (SD-OCT). The presence and severity of metamorphopsy was tested using the Amsler test, M-charts test and original mobile application.

**Results:**
The sensitivity of the tests diagnosing the metamorphopsis symptom in the detection of macular disease was about 52% for Amsler test, 47% for M-charts and 51% for mobile application. The specificity, on the other hand, varied between 82-85% depending on the test. The sensitivity and specificity of tests diagnosing metamorphopsia in relation to the diagnosed advanced macular disease was much higher and amounted to approximately 70% sensitivity and 95% specificity for all tests.

**Conclusions:**
Standard diagnostic tests and the original mobile application have similar sensitivity and specificity, however too low for detecting macular diseases to be able to become an appropriate diagnostic tool for this purpose. The sensitivity and specificity of the tests tested is high in the advanced form of AMD, which may be useful in monitoring the development of the disease.

**Title:** Narrow band imaging (NBI) in the assessment of laryngeal granuloma.

**Authors:** Karolina Burda, Hanna Klimza MD, PhD, prof. Małgorzata Wierzbicka MD, PhD

**Session:** Medicine 2 (Neurology & Psychiatry & Neurosurgery, Otolaryngology& Ophthalmology)

**Introduction:**
Laryngeal granulomas (LG) belong to late, minor, postoperative complications following Trans-oral laser microsurgery( TLM). Usually, these lesions occur within 1 or 2 months after surgery.

**Aim of this study:**
The main aim of this study was to assess the accuracy of preoperative evaluation of vocal fold granuloma by means of NBI in comparison to final histology and follow-up outcomes.

**Methods:**
The study was carried out between April 2015 and November 2017 at Poznan and Lodz University of Medical Sciences, Department of Otolaryngology, Poland. We enrolled 154 consecutive patients after trans-oral laser microsurgery (TLM) due to laryngeal cancer in early stage. After surgery, all patients were examined ever one month by using trans-nasal flexible video-endoscope (Olympus Medical System Corporation, Tokyo, Japan) with the optical filter for NBI and video-stroboscopic laryngeal. In these patients, 47/154 (30,52%) laryngeal granulomas were found.

**Results:**
The patients with laryngeal granulomas were divied into two groups according to the NBI classification. Group A (13/47): perpendicular vascular changes in the area surrounding granuloma tissue ; Group B (34/47): longitudinal vascular changes. In all patients the microvascular pattern in NBI was compared with the final histology. There was the significant correlation between the NBI pattern of the mucosa in area of the granuloma tissue and the final histological result:Chi2(1)=34.81; p=0.00001. In group A, with suspicious, perpendicular vessels, the final histology results were: 13/13 (100%) samples were positive, 10/13(76,7%) severe dysplasia, 1/13(7,7%) cancer in situ, 2/13(15,4%) moderate dysplasia. In group B, with not suspicious longitudinal vessels, the final histology results were: 3/34 (8.82%) samples were positive: 3/3: moderate dysplasia, 30/34 samples were negative, all samples were granulation tissue. Sensistivity, specifity, accuracy in NBI were as follows: 81.25%, 100%, 93.62%.

**Conclusion:**
NBI video-endoscopy is a promising non-invasive technique in differentiating local recurrence of laryngeal cancer. Our study highlights the clinical value of NBI. Based on our results, the NBI can be useful tool in determination of the border between contact granuloma and local recurrence following TLM, through recognition of intraepithelial papillary capillary loops in blue light.

**Title:** The involvement of humanin in development of Parkinson`s disease.

**Authors:** Olaf Chmura, Adrianna Wąsińska, Barbara Zapała, Ewa Świndryk

**Session:** Medicine 2 (Neurology & Psychiatry & Neurosurgery, Otolaryngology& Ophthalmology)

**Introduction:**
Humanin (HN) was identified in the brain of a patient diagnosed with Alzheimer's disease (AD). This 24-amino acids peptide was shown to suppress the neuronal cell loss caused by amyloid-β (Aß) and by amyloid precursor protein (APP) mutations associated with early onset familial Alzheimer's disease (FAD). Recent studies revealed that HN activity is not confined only to neurons but it involves also other compartments of the brain as well as extraneural tissues. These results suggest that HNs may influence on other neurodegenerative disorders such as Parkinson's disease (PD).

**Aim of the study:**
We genotyped the not-known polymorphic variants of 13Thr- and 13Ile-HN10b (with threonine or isoleucine in amino acid position 13), encoded by HN gene in PD- diagnosed patients.

**Materials and Methods:**
DNA was isolated from peripheral blood from 214 patients with diagnosed PD and 193 healthy adult individuals. Genotyping was performed on the 3130xl Genetic Analyzer (Applied Biosystems).

**Results:**
Genotyping results have not shown any significant association between identified 13Thr- and 13Ile-HN10b polymorphic variants (38C>T) in control as well in PD-diagnosed individuals. However we demonstrated higher frequency of C/T and C/C genotypes in comparison to T/T in patient with dementia (MMSE). Similar relation we observed in patients with severe symptoms of PD progression (basing on Hoehn and Yahr as well as UPDRS rating scale).

**Conclusions:**
Our results suggested that 13Thr- and 13Ile-HN10b polymorphic variants (38C>T) is not associated in development of PD. However we can speculate that T/T genotype could be considered as protective factor during development of PD.

**Title:** Pregnancy and multiple sclerosis

**Authors:** Sanda Pudule, Daina Pastare

**Session:** Medicine 2 (Neurology & Psychiatry & Neurosurgery, Otolaryngology& Ophthalmology)

**Introduction:**
Multiple sclerosis (MS) is a demyelinating central nervous system (CNS) disease which mostly affects people of reproductive age, therefore it is essential to consider the effects MS has on pregnancy and birthing, as well as the effects on the foetus and the new-born during the perinatal period.

**Aim of the study:**
To evaluate impact of disease to pregnancy and perinatal period in MS patients.

**Materials and Methods:**
The research took place at Paula Stradina Clinical University Hospital, in the time period between January 1, 2008 and August 31, 2018. Retrospective analysis was conducted based on ICD-10 code O99.3 by selecting medical histories of the following groups: pregnant MS patients (n=35), pregnant women with other neurological illnesses (n=509) and pregnant women with suspicion of demyelinating CNS illness (n=4). In order to compare the results between the MS group and the general population, the control group was randomly selected (n=40). The data was statistically analysed by using Microsoft Excel and IBM SPSSS Statistics 22 programs.

**Results:**
During the research period, MS occurred rarely in comparison to other neurological illnesses. 30 pregnant patients with MS were admitted to the hospital, and out of these patients, 5 were admitted twice. The patients were between 26 and 45 years old at the beginning of pregnancy. Out of the 35 hospitalisation instances, complications related to MS were observed 3 times. 2 of the patients continued immunomudulation therapy during their pregnancy (glatiramer acetate (n=1) and interferon beta- 1a(n=1)). There was no statistically significant difference between the amount and types of abortions in the MS group and the control group ($p>0,05$). Pregnant MS patients spent a longer time at the hospital than other pregnant control group women ($p<0,05$). There was a significant difference in the selected birthing approach, where patients with MS experienced more operative involvement than the control group ($p< 0,05$). Patients with MS received acute caesareans more often ($p<0,05$). There was no significant difference between the two groups with regards to giving birth around the expected due date ($p>0,05$) and the frequency of complications during delivery ($p>0,05$). The new-borns of patients with MS were not diagnosed with malformation or intrauterine growth restriction. No statistically significant differences were observed between the MS (n=28) and control group (n=35) new-borns when analysing other related factors ($p>0,05$).

**Conclusions:**
MS did not have a significant impact on either the pregnancy, or the foetus/new-born during the perinatal period. Statistically significant differences were found during the birthing processes where MS patients had more caesarean sections. The MS patients were hospitalised for longer periods of time and the majority took no MS treatment related medications during pregnancy. There was no significant difference between the types and amount of abortions between the 2 groups.

**Title:** The impact of thryroid hormones, TSH, age and sex on the thyroid radioiodine uptake in patients with non-toxic nodular goiter.

**Authors:** Aleksandra Polak, Natalia Królik, Michał Sankowski

**Session:** Medicine 3 (Internal Medicine, Endocrinology & Diabetes)

**Introduction:**
Non-toxic nodular goiter is the most common thyroid pathology in countries with insufficient supply of iodine in the daily diet and in the air (Central Europe and Eastern Europe). Radioiodine (131I) therapy is widely used for treatment of non-toxic goiters. However a limitation for this treatment is a low thyroid radioiodine uptake (RAIU) in these patients.

**Aim of the study:**
To estimate the impact of thyroid hormone levels, TSH, age and sex on the thyroid RAIU. We also determined the impact of thyroid volume and the duration of the disease on the 24-hour RAIU.

**Material and methods:**
The study was based on the data/medical records of 60 patients (17 men and 43 women aged 22-78 years) diagnosed with non-toxic nodular goiter who were reffered for radioiodine tratment to the Department of Nuclear Medicine of the Medical University of Białystok/ at the University Clinical Hospital in Białystok. All patients complained of compressive symptoms or cosmetics discomfort. The levels of FT4, FT3 and TSH were determined in all the patients. Thyroid volume was estimated by ultrasonography and ranged between 20-65ml. All nodules detected by USG were diagnosed through fine needle aspiration biopsy in order to exclude malignancy. Thyroid scintigraphy with RAIU was performer 24 hours after administration a diagnostic dose of I-131 (2-4MBq).

**Results:**
The 24h RAIU was not significantly related to sex (p=0,57108), age (p=0,3198), serum levels of TSH (p= 0,3198), FT4 (p=0,4638) and FT3 (p=0,5621). There were no statistically significant correlation between radioiodine uptake and thyroid volume (p=0,4423) or duration of the disease (p=0,4761).

**Title:** Impact of elevated cardiac troponin and brain natriuretic peptide on mortality in patients with acute pulmonary embolism.

**Authors:** Kristīne Maķe, Valdis Ģībietis, Dana Kigitoviča, Sintija Strautmane, Kitija Meilande, Verners Roberts Kalējs, Anastasija Zaičenko, Dr. med. Andris Skride

**Session:** Medicine 3 (Internal Medicine, Endocrinology & Diabetes)

**Introduction:**
Acute pulmonary embolism (APE) is a form of venous thromboembolism (VTE) with high mortality level and wide clinical presentation, especially in patients with elevated serum troponin level (ESC Guidelines, 2014). The role of elevated brain natriuretic peptide level has been analysed in small studies and it can be suggested as a predictive factor of mortality for patients with APE (El-Habashy M. M. et al, 2014).

**Aim of the study:**
The purpose of this study was to evaluate the association of cardiac troponin and brain natriuretic peptide elevations with all-cause short-term (ninety days) and long-term (one year) mortality risk in patients with APE.

**Materials and methods:**
The prospective cohort study included information about patients with APE hospitalized in single clinical university hospital from June 2016 till January 2019. Troponin-I (Tr-I) and brain natriuretic protein (BNP) levels were assessed. Ninety-day and one-year analysis included 298 and 232 patients respectively. Data were analysed and calculated by IBM SPSS 23.0.

**Results:**
Ninety-day and one-year mortality was 16,8% (n=50) and 28,9% (n=67) respectively. 29 of 136 patients with elevated Tr-I levels died in ninety days (21,3%) compared with 17 of 121 patients with normal Tr-I levels (14,0%). 36 of 136 patients with elevated Tr-I level died in one year (26,5%). The average level of Tr-I among the patients with ninety-day mortality was 103,0 ng/L, but among the patients with one-year mortality – 71 ng/L. 18 of 148 patients with elevated BNP level died in ninety days (12,2%) compared with 5 of 51 patients with normal BNP level (9,8%). 28 of 148 patients with elevated BNP level died in one year (18,9%). The average level of BNP among the patients with ninety-day mortality was 350,1 pg/ml, but among the patients with one-year mortality –515,3 pg/ml. This study demonstrated statistically significant association between the increased Tr-I level and 90-day mortality (p=0.033). Elevated BNP level had no statistically significant impact on short-term and long-term mortality.

**Conclusions:**
This study showed that elevated serum troponin level has impact on short-term mortality. No statistically significant association between elevated BNP level and neither short-term nor long-term mortality was found in the study.

**Title:** THE EXAMINATION OF COMPUTED TOMOGRAPHY SCANS OF THE PARANASAL SINUSES IN PATIENS WITH CHRONIC RHINOSINUSITIS

**Authors:** Lolita Gundareva, Viktorija Šmerlinga, Svetlana Koņuhova, Sarmīte Dzelzīte

**Session:** Medicine 3 (Internal Medicine, Endocrinology & Diabetes)

**Introduction:**
Chronic rhinosinusitis (CRS) encompasses a heterogeneous group of debilitating chronic inflammatory sinonasal diseases. Despite considerable research, the etiology of CRS remains poorly understood, and debate on potential roles of microbial communities is unresolved.It is associated with significant reduction of quality of life, high health-care utilisation and significant absenteeism/presenteeism.

**Aim of the study:**
To evaluate features of anatomical structure of nasal cavity with computer tomography (CT) scans, patients with chronic rhinosinusitis complaints as well as breathing difficulties through nostrils.

**Materials and methods:**
The retrospective study was conducted at the Headline Clinic and PaulsStradiņš Clinical University Hospital with148 patients with complaints of prolonged difficulty of breathing through the nose and signs of chronic rhinosinusitis.Anatomical structures of the nasal cavity as seen in CT scans were analyzed.Data were analysed using IBM SPSS Statistics 22. Statistical significance was set at $p<0.05$.

**Results:**
102 were male patients (68.9%), 46 were female (31.1%). 123 patients(80.9%)hadosteomeatal complex narrowing.75% (n=111) had radiologically confirmed maxillary sinus mucosa hyperplasia on the right side and 76.4% (n=113)on the left side. Signs of chronic inflammation (sclerosis) on the right side were seen in 14 patients (9.5%), left side in 12 (8.1%) patients. Inferior nasal concha hypertrophyon the right side was found in 91 patients (61.5%), on the left side - 88 (59.5%).Middle nasal concha hypertrophy on the right side was in 56.1% (n=81), left side – 57.4%(n=85). Septal deviation was found in 144 patients. Right-sided deviation was seen in 57 patients (37.5%), left-sided - in 75 patients (49.3%). No statistically significant correlation was found between nasal septal deviation and middle/inferior nasal concha hypertrophy ($p>0.05$).

**Conclusions:**
Nasal septal deviation was the most common finding in CT scans.Results obtained in this research could be a good basis for further in-depth studies of anatomical features in chronic rhinosinusitis.
Keywords: CT scans, nasal septal deviation, chronic rhinosinusitis.

**Title:** Bronchoscopic interventions as a management of airway complications after lung transplantation- single center study

**Authors:** Martyna Gawęda, Anastazja Pandel, Monika Okienica, Adrianna Boroń, Marta Wajda-Pokrontka, Fryderyk Zawadzki

**Session:** Medicine 3 (Internal Medicine, Endocrinology & Diabetes)

**Introduction:**
Lung transplantation (LT) is often the only proper treatment for patients with end-stage lung disease. There are two options: a single-lung transplantation (SLT) or a double lung transplantation (DLT). This procedure is also associated with certain risk of complications related to airway stenosis, that can be treated with bronchoscopic interventions (BI).

**Aim of the study:**
The aim of the study was to assess the frequency of bronchoscopic interventions developed in the post transplantation period.

**Material and methods:**
A retrospective study of 156 patients (58 woman, 98 man; with an average age: 43.9), who underwent lung transplantation from March 2007 until February 2019. The study includes 68 SLT recipients (43.59%) and 88 DLT recipients (56.41%). The means of BI were as follows: endobronchial stents placement, balloon bronchoplasty, argon plasma coagulation, laser therapy, cryotherapy.

**Results:**
Among SLT recipients 35,29% of them required bronchoscopic intervention and when it comes to patients that underwent DLT, 43,18% of them needed such treatment. The most common underlying diseases which occurred within the above-mentioned group that required the usage of the bronchoscopic interventions were: chronic obstructive pulmonary disease (COPD) – 24 (39.34%), cystic fibrosis (CF) – 11 (18.03%), idiopathic pulmonary fibrosis (IPF) – 7 (11.46%) and idiopathic pulmonary arterial hypertension (IPAH) -6 (9.84%). Balloon bronchoplasty was carried out on 47 patients. Such treatment was applied 609 times (the mean frequency was 13 times per patient). Argon plasma coagulation was used among 42 recipients. It was applied 375 times (with an average of 8,9 times per patient). Endobronchial stents were placed 89 times among 32 patients (the average number of stents per patient was 2,8). Laser therapy implemented on 9 recipients in a total number of 18 procedures (mean 2 per patient). The biggest number of BI was performed within the first year after LTx. The most common place for the intervention was intermediate bronchus (87% of balloon bronchoplasties and 91% of stent placements).

**Conclusions:**
Bronchoscopic interventions were relatively frequent among patients after LTx. In our center, less than a half of transplanted patients were in the need of them. Patients with COPD were the group most often requiring bronchoscopic interventions. The number of interventions is the biggest within the first year after transplantation and decreases gradually with time.

**Title:** Association of nadir CD4 count with blood pressure among HIV infected individuals.

**Authors:** Piotr Prymas, Mikołaj Kamiński, Anna Konobrodzka, Piotr Filberek, Greta Sibrecht, Wojciech Sierocki, Zofia Osińska

**Session:** Medicine 3 (Internal Medicine, Endocrinology & Diabetes)

**Background:**
HIV is an independent risk factor of arterial hypertension. There is a limited data on blood pressure among HIV-positive patients living in rural areas in Africa according to their clinical history.

**Aim of the study:**
The aim of the study was to establish whether an independent relationship exists between nadir CD4 count and hypertension.

**Material and methods:**
During this prospective, two-center, cross-sectional study in rural Comprehensive Care Clinic (CCC) for HIV patients in Mutomo Muthale Missionary Hospitals, Kitui County, Kenya, BP was measured by OMRON M2 Basic BP monitor (Omron, Japan) and clinical data, including nadir CD4 count, was collected from patients data charts. The study was conducted during the program „Treating with mission" under the auspices of the Poznan University of Medical Sciences, Poznan, Poland. Data presented as median (interquartile range).

**Results:**
From total 136 (female = 110 [81%]) participants 81 individuals had nadir CD4 count > 200 cells/mm3, whereas 55 had nadir CD4 count <200 cells/mm3. Both groups did not differ significantly in sex, age, time since HIV diagnosis, BMI, using of antiretroviral treatment nor presence of abnormal blood pressure. There were significant differences between groups in systolic BP (SBP) [120(110-132) vs. 113(107-122); p=0.01] and pulse pressure (PP) [51(46-60) vs. 47(40-54); p=0.01]. We also noticed significant difference in waist-to-hip ratio (WHR) [0,88(0,85-0,92) vs. 0,86(0,82-0,89) ; p=0.01].

**Conclusions:**
Our data showed that CD4 count < 200 cells/mm3 is associated with lower systolic blood pressure and pulse pressure. Those results does not affirm the hypothesis that low nadir CD4 count constitutes a risk factor of hypertension. However, both groups differed in WHR, which can disturb our results. Further data is needed the asses the correlation between nadir CD4 count and risk of hypertension.

**Title:** Is it safe to wait ? – the neonatal outcomes of delayed childbearing

**Authors:** Aleksandra Matonóg, Paulina Lewandowska, Dominika Janus, Katarzyna Chmura

**Session:** Medicine 4 (Paediatrics & Neonatology, Gynaecology & Obstetrics, Cardiology & Cardio surgery, Haematology & Oncology)

**Introduction:**
Recently more and more women choose to delay childbearing until later in life. Having a baby in women's 40s does not shock as much anymore, as it used to in the past, but regardless of that it is commonly known that late pregnancy increases the risk of gestational and postnatal complications.

**Aim of the study:**
The aim of the paper was to evaluate the advanced mother's age impact on the occurance of perinatal and postnatal period complications.

**Materials and Methods:**
The study group included 500 women over 35 years old. It was divided into two smaller groups – mothers aged 35-39 (n=388) and mothers over 40 years old (n =112). The control group consisted of 500 women under their 35s. The database including selected clinical and demographic datas as well as complications during pregnancy and neonatal period was created. The analysed parameters were – premature rupture of membranes (PROM), prematurity, asphyxia, small for gestational age (SGA) and macrosomy, Neonatal Intensive Care Unit (NICU) hospitalization, respiratory distress syndrome (RDS) and intraventricular haemorrhage (IVH).

**Results:**
A total of 1000 mothers was analysed. We observed statistically higher frequency of PROM (52,7% ; p<0,00001) among mothers over 40 years old in comparison to both the control group and mothers aged 35-39. What is more the neonates of mothers in their fourties were more frequently born prematurely (94,4% ; p<0,00001) and in asphyxia (15,1% ; p = 0,00062). They also more often required a hospitalization on NICU (35,7% ; p <0,00001). Occurance of RDS (57,1% ; p<0,00001) and IVH (61,6% ; p<0,00001) was also increased in children of mothers with advanced maternal age. On the other hand we did not observed the influence of mother's age neither on SGA (p = 0,42) nor macrosomy (p = 0,3).

**Conclusions:**
Mother's age has an influence on perinatal and postnatal period disorders.

**Title:** AHI IN ACUTE ISCHEMIC STROKE PATIENTS

**Authors:** Joanna Bisaga, Daria Siewior, Magdalena Kurczab, Wojciech Kowalczyk, Klaudia Redel, Klaudia Adamczewska,

**Session:** Medicine 4 (Paediatrics & Neonatology, Gynaecology & Obstetrics, Cardiology & Cardio surgery, Haematology & Oncology)

**Introduction:**
Obstructive sleep apnea (OSA) is a breathing disorder during sleep regarded as cardiovascular risk factor associated with increased mortality. The Apnea–Hypopnea Index (AHI) is represented by the number of apnea and hypopnea events per hour of sleep. ECG seems to be potentially the most practical, non-invasive tool for screening for sleep disordered breathing (SDB). In patients with AHI>15 risk of SBD is significant. OSA is important, modifiable risk factor of acute ischemic stroke (AIS) which is responsible for majority of neurological disabilities in adults.

**Aim of the study:**
The aim of our study was to estimate AHI based on ECG in patients with cryptogenic AIS and in healthy subjects. We wanted to measure if the episode of AIS leads to increased AHI. Material and methods: The study group consisted of 92 patients diagnosed with first symptomatic cryptogenic AIS (age: 60±14; 51%males) hospitalized in Neurology Department, Leszek Giec Upper-Silesian Medical Centre of the Silesian Medical University in Katowice in years 2015-2018. Patients were divided into 2 groups: TACI (anterior ischemia) and non-TACI (posterior ischemia). Each patient had 7-days Holter recording. Control group contained 50 healthy people (age:55 ± 9; 66%males) after Holter ECG monitoring in 1st Chair and Clinic of Cardiology in Upper Silesian Medical Centre in Katowice. Data was analyzed and automated algorithm was used to estimate patients' AHI. AHI thresholds of <5 and >15 were used to indicate low and high probability of OSA.

**Results:**
AHI was significantly increased in AIS patients in comparison to control group (p=0,001). AHI in non-TACI patients (14±5,3) was higher than in TACI (10,5±4,8) and control group (8,5±8,4). AHI>15 occurred in 29% AIS patients and in 16% from control group.

**Conclusions:**
Patients after AIS are more likely to have higher AHI and higher probability of OSA. Non-TACI AIS is significantly more predisposing factor of SDB which might be related to localization of ANS respiratory center.

**Title:** The ultrasound evaluation of hypothyroidism in pediatric population

**Authors:** Małgorzata Matuszek, Ewa Kopyto, Michał Kaczor, Katarzyna Laszczak, Magdalena Woźniak

**Session:** Medicine 4 (Paediatrics & Neonatology, Gynaecology & Obstetrics, Cardiology & Cardio surgery, Haematology & Oncology)

**Introduction:**
Hypothyroidism in children is diagnosed at an early age or later depending on clinical manifestations. Symptoms, blood tests and ultrasonography are taken into consideration when evaluating the possibility of an hypothyroidism. Ultrasonography is the first imaging modality performed in children to confirm changes of the thyroid gland.

**Aim:**
The ultrasound assessment of the hypothyroidism in children.

**Materials and methods:**
The study included 100 consecutive patients examined in the Department of Pediatric Radiology, Medical University of Lublin, who underwent ultrasound examinations during the period from November 2018 to February 2019. The study was carried out with Philips EPIQ 5G and Siemens Acuson S3000 ultrasound scanners with linear transducers of the frequency of 8-14 MHz. The examined group included 56 girls and 44 boys at the age from 2 to 18 years, who were examined due to primary thyroid disease (n=48) and other health problems (n=52). Echogenicity, presence of focal lesions, vascularisation, presence of fibrotic changes, contours and total volume of the gland were evaluated.

**Results:**
48 patients were diagnosed with primary thyroid dysfunction. Hypothyroidism was the most frequent dysfunction diagnosed in 28 patients, including autoimmune thyroiditis and other forms of thyroid insufficiency. Whilst 52 of all underwent the examination due to other problems like leukemias (14) or hypopituitarism (6). Ultrasonography of the underactive gland has shown echogenic abnormalities in 12 patients, 8 patients presented focal lesions, 3 presented irregular contours, 4 presented fibrotic changes and 12 of them has shown abnormal vascularity.

**Conclusions:**
Ultrasonography is a very helpful diagnostic tool often necessary to complete the whole process of diagnosis.

**Title:** Is it possible to estimate tumour malignancy basing on imaging examinations? Diagnosis of neuroendocrine tumours in the pancreas.

**Authors:** Marta Oleksa, Joanna Pilarska, Monika Homa

**Session:** Medicine 4 (Paediatrics & Neonatology, Gynaecology & Obstetrics, Cardiology & Cardio surgery, Haematology & Oncology)

**Introduction:**
Pancreatic neuroendocrine tumours occur rarely and compromise 2% or less of all pancreatic neoplasms. It is possible to detect them in Computed Tomography what can be used to estimate pathology staging.

**Aim of the study:**
The aim of our study is to present the most common images of pancreatic neuroendocrine tumours in Computed Tomography and compare them with proliferation index and the measure of histological malignancy.

**Materials and methods:**
Our analysis included 107 patients. 66 of them were accepted to further research. The patients were devided into 4 groups due to the type of their tumour: those having solid, heterogenous, cystic or cystic-solid. Moreover, the analysis included proliferation index and the measure of histological malignancy of the tumours.

**Results:**
The vast majority constituted solid tumours (about 45%). The second group contained patients diagnosed with cystic-solid neoplasms, it counted about 23%. The least numerous groups consisted of heterogenous and cystic tumours, counted respectively 17% and 15%. According to our research, cystic tumours are better-differentiated and have lower proliferation index than the solid ones.

**Conclusions:**
Depending on the tumour type, the measure of proliferation index and grading reach different values. The most important is the fact that, basing on Computed Tomography examination of tumour, we are able to predict its malignancy.

**Title:** The mystery of a cell – relationship between AB0 phenotype and postnatal period disorders

**Authors:** Paulina Lewandowska, Aleksandra Matonóg, Katarzyna Chmura, Dominika Janus

**Session:** Medicine 4 (Paediatrics & Neonatology, Gynaecology & Obstetrics, Cardiology & Cardio surgery, Haematology & Oncology)

**Introduction:**
The most common blood types among polish population are blood type A and 0 (accordingly 38% and 37%) and the least observed blood group is AB (8%). Adults with certain blood type are more prone to develop specific diseases, however little do we know about newborns.

Aim of the study:
The objective of this study was to determine the relationship between blood type and complications during neonatal period.

**Materials and methods:**
Medical records of 2401 neonates born between 2009 and 2018 in Neonatal Clinic in Katowice were collected. We enrolled to this retrospective study the group of 545 newborn, reflecting the distribution of the blood types in the clinic's population. Database included selected clinical and demographic datas as well as complications and disorders during neonatal period such as prematurity, neutropenia, IVH (intraventricular haemorrhage) SGA (Small for Gestational Week), RDA (respiratory distress syndrome) and PDA (patent ductus arteriosus).

**Results:**
In the studied population the incidence of representing blood type was A in 40,2% newborns, B in 20,9% neonates, AB in 8,1% infants and 0 in 30,8% children. There was an increased number of late preterms in newborns with blood type AB (52,3%) whereas decreased among infants with blood type A (17,8%). What is more, children with blood type AB were also more likely to be born extremely prematurely (6,8%). Neutropenia occurred in more than half children with blood type AB (52,3%). We also noticed that 30,7% of neonates with blood group B had suffered from IVH in comparison to infants with blood group A (17,8%). Interestingly, small for gestational age was the most frequent in neonates with blood type 0 – 13,1%. The analysis showed no significant differences between occurrence od RDS and PDA between neonates with certain blood groups.

**Conclusions:**
The blood type has an influence on occurance of certain neonatal disorders.

# Medicine Sciences Block – Case Report

**Jury:**

Andrzej Kobryń, PhD

Marcin Wróblewski, PhD

Przemysław Krawczyk, PhD

**Moderator:**

Małgorzata Nartowicz

Katarzyna Lipa

Kinsi Ahmed

**Title:** Patient with fever, leukocytosis and bumpy rash - adult-onset Still's disease

**Authors:** Aleksandra Drzewiecka, Piotr Nadarzyński, Tomasz Arentewicz, Rafał Radochoński

**Session:** NON - SURGICAL CASE REPORT

**Introduction:** Still's disease, known more widely as juvenile idiopathic arthritis, is a common form of arthritis in children, but an adult-onset Still's disease is rare systemic autoinflammatory disease. It is characterized by the classic triad of persistent high spiking fevers, a distinctive salmon-colored bumpy rash and joint pain, which is not always present in the first stage of the disease, hence making a diagnosis can be problematic.

**Case report:** 29 year-old patient was examined by the Primary Health Care doctor due to skin lesions on the torso and a fever of over 39 degrees Celsius, which lasted for about two weeks for several hours a day. The doctor implemented antibiotics, suspecting an infection, but the improvement did not take place within the next three weeks. The patient was referred to the hospital. In the physical examination during admission, his body temperature was 39.6 degrees Celsius, paleness and salmon-colored rash were observed. There were also generalized lymphadenopathy and hepatosplenomegaly found. During hospitalization, it was noticed that skin lesions are most expressed at the top of the fever. Laboratory tests showed increased OB (>120 mm/h) and CRP (100 mg/l), anemia, leukocytosis (in the smear - neutrophilia 90%), thrombocythosis, increased aminotransferases (AspAT and AlAT). Other tests showed the presence of non-specific antinuclear antibodies in the low titre and a significantly elevated ferritin concentration (3200 mg/dl). Biopsy of the enlarged lymph node revealed nonspecific lymphoproliferation. In an anamnesis, patient reported that as a 4-year-old child he was "seriously ill" and hospitalized because of suspicion of leukemia. We can assume that one of the leading symptoms at that time was high fever and leukocytosis. He knows from his parents', that he has been treated with steroids with a good effect. The rheumatologist, based on the exponents of chronic inflammation, high ferritin and anamnesis, concluded that the patient suffered from adult-onset Still's disease. He implemented new treatment, NSAIDs and prednisone. Fever and skin changes have disappeared. Currently, the patient does not report any ailments. Arthritis may occur many weeks or months after the onset of fever, but there is a chance that the therapy will allow to avoid this.

**Conclusions:** One of the causes of fever with unknown origin may be Still's disease, the symptoms of which may be recurring or occur for the first time in adults. It is relatively rare, though perhaps because it is rarely considered in differential diagnosis in people with fever and skin lesions who do not have joint complaints. There are no single diagnostic tests or histopathological examinations confirming the diagnosis, therefore in a patient with fever about 39 degrees Celsius, salmon-colored bumpy rash and leukocytosis, the ferritin concentration test may be invaluable help in the diagnostic process.

**Title:** Spontaneous perirenal hemorrhage - Wunderlich syndrome

**Authors:** Ewelina Mazur

**Session:** NON - SURGICAL CASE REPORT

**Introduction:** The Wunderlich syndrome, also known as spontaneous perirenal hemorrhage [SPH], is a rare disease in which, without the history of trauma, there is bleeding into the subcapsular or perirenal space. The rarity of occurrence of this disease is emphasized by the fact that up to 250 cases have been described by 2003. Only eleven idiopathic. The most common typical symptoms are: pain in the lumbar area (53%), palpable tumor (47%) and shock or massive haematuria (23%), referred to as Lenk's triad.

**Case report:** 58 y.o. patient with chronic heart failure, multiple-valvular disease, chronic ischemic heart disease, 2 myocardial infarctions (1993, 2011) and 2 right coronary artery angioplasty (2011, 2012), chronic renal failure, persistent fibrillation / atrial flutter, with the history of malignant granulomatous disease after radio and chemotherapy (1991-93) was admitted urgently to the Department of Heart and Vessels Diseases of the John Paul II Hospital in Krakow due to exacerbation of right heart failure. Physically the characteristics of pulmonary edema, pitting edema, on the abdomen - numerous ecchymosis after the injection of enoxaparin. Due to progressive anemia in laboratory tests, abdomen CT scan was performed, in which the retroperitoneal hematoma, approx. 13.5 x 10.6 x 25.6 cm on the right side was noted, with partial hemolysis, with no visible source of bleeding. Due to the chronic and spontaneous nature of the hematoma without indications for urgent intervention. On the same day, 4U of PRBC and 2U of FFP were jointly transfused without complications. Anticoagulation was temporarily stopped, and Cyclonamine infusions were used. In control laboratory testing, the level of hemoglobin without a downward trend. During hospitalization, we implemented diuretic treatment, fluids and electrolytes balance monitoring, and body weight control (in total, the patient lost 17 kg during hospitalization).

**Conclusions:** Standard imaging (USG, CT, MR) confirm SPH diagnosis, with CT being often used to explain the etiology of the syndrome and considered a gold standard in the diagnosis. The most common cause of SPH is the presence of a kidney tumor, in particular, angiomyolipoma and RCC. For this reason, after establishing a diagnosis, a nephrectomy or a laparotomy is often performed. However, in the case of our patient, the suggested cause of the disease seems to be the idiopathic or miscellaneous: coexistence of radiation induced vascular damage, in combination with pulmonary hypertension and anticoagulant therapy. Here, conservative treatment is a sensible option and saves the patient unnecessary surgery.

**Title:** Can metabolic error have an impact on fertility? – case report about pregnant patient diagnosed with classic galactosemia

**Authors:** Jagoda Kruszewska, Aleksandra Leki, Sandra Krzywdzińska

**Session:** NON - SURGICAL CASE REPORT

**Introduction:** Classic galactosemia, an inborn defect of galactose-1-phosphate uridiltransferase is an autosomal recessive disorder, which if not accompanied by adequate diet may lead to destruction of liver, brain, kidneys and lenses. Less commonly known fact is that the disease also affects ovaries and contribute to development of Premature Ovarian Insufficiency (POI). The condition manifests with diminished hormonal activity of gonads and low ovarian reserve. Affected patients present with lack of menstruation and have small chances for successful pregnancies.

**Case report:** A 20-year old patient presented to her gynecologist in 10th week of gestation. As a newborn, due to flatulence she was diagnosed with classic galactosemia. Since then she needed to stick to restrictive lifelong diet limiting the intake of all products containing galactose. Despite that, at the age of 14 pediatricians confirmed her Premature Ovarian Insufficiency. She had primary amenorrhea (lack of menstruation) and disturbances in sexual development. She was prescribed hormonal replacement therapy (HRT). On a transition to adulthood, the female was admitted to the Department of Gynecological Endocrinology for routine evaluation. Most of examinations, including transvaginal ultrasound and blood test, appeared normal. Hormonal profile was compatible with the application of HRT. The concentration of AMH (Anti-Mullerian Hormone) was almost undetectable, indicating very low ovarian reserve. Surprisingly, six months after hospitalization the patient conceived without any medical intervention. The course of pregnancy was uneventful. Spontaneous labour occurred in 40th week of gestation. A healthy boy, weighing 3500g was born and appeared only to be a carrier of a mutation and is not affected by galactosemia.

**Conclusions:** POI develops in individuals with classic galactosemia despite dietary restrictions and may be a reason of potential infertility. Nevertheless, very small percentage of patients may still conceive spontaneously. If pregnancy is not desirable, use of contraception should be considered.

**Title:** „Lineage switch"- a rare case with poor outcome

**Authors:** Kinga Grabska

**Session:** NON - SURGICAL CASE REPORT

**Introduction:** Acute leukemias are the most common tumours among children. They can be divided into lymphoblastic-ALL(80%) and myeloid-AML(20%). The conversion of one type into another is extremely rare. This phenomenon is called „lineage switch".

**Case report:** A 9-year old girl was admitted to the Haematology and Oncology Department in March 2018 with suspected leukemia. The patient had been complaining about weakness, lack of appetite, limb and stomach pain as well as nausea for a week. On admission the child was in good condition. On physical examination: patechiae were noticed on thorax and feet; lymph nodes under mandible were enlarged; liver and spleen were slightly extended but not painful. Blood examination revealed: hyperleukocytosis-L:58 thous., anemia-Hgb. 9,7 g/dl, thrombocytopenia-Plt. 54 thous and presence of blasts. Common ALL (without BCR/ABL or MLL) was eventually diagnosed due to biopsy of marrow, in which 95% of blasts were reported. The patient was treated with protocol ALIIC 2009. Because of the fact that the answer to corticosteroids on the 8th day of treatment was not satisfying and there was 17,94% of blasts in marrow on the 15th day, the patient was qualified to the group of high risk. However, remission was achieved on the 40th day. During induction therapy some complications occured- pancytopenia, peripheral polineuropathy and neutropenic fever. Additionally, in remission hyperpigmented lesions on the skin (like cafe au lait spots) and subcutaneous nodules appeared. The patient complained about bone pain. Because of that another examination of bone marrow as well as a biopsy of the skin were conducted. Due to the findings of these tests, an unclassified type of AML was diagnosed and the girl got AML-BFM 2012 protocol and induction therapy (AIE). During this treatment, the child's condition worsened dramatically – with pneumonia, subcutaneous oedema, hyperaesthesia and osseous pain. After 7 days of that protocol the patient was admitted to the Intensive Care Unit because of respiratory failure. Despite complications chemotherapy was sustained. The patient was qualified to HSCT from an unrelated donor, but sadly she did not achieve remission. Because of huge resistance of AML cells to usual therapy and the presence of CD33 molecule on the blasts, the girl was treated with IDA –FLAG+ gentazumab (anti-CD33) with no success. Another protocol with new medicines (TVTC) was also tried unsuccessfully with complications like septicaemia, pancytopenia and tremendous bone pain. There was no possibility of other treatment and chance for girl to be cured. It was decided not to escalate the therapy. The patient died due to progression of leukaemia.

**Conclusion:** The lineage switch is really rare and its pathogenesis is not fully explained. Unfortunately the prognosis for patients with this conversion is highly unpromising. Analysing such cases can provide better understanding and improve treatment of lineage switch.

**Title:** A Child with the Wiskott-Aldrich Syndrome- the importance of a holistic approach to the patient in an effective diagnosis process

**Authors:** Kinga Półkośnik, Anna Kaczyńska, Ewelina Karolkiewicz, dr n.med. Maria Piotrowska- Depta

**Session:** NON - SURGICAL CASE REPORT

**Introduction:** The Wiskott–Aldrich syndrome (WAS) is a x- linked recessive disease characterised by immune deficiency and reduced ability to form blood clots. It is associated with the mutation of the gene WAS encoding the WAS protein (WASp). WASp is found in all blood cells and it is responsible for trigger cells' move and adhesion. Lack of functional WASp leads to reduced respond of white blood cells (WBC) to foreign invaders, causing recurrent infections. It also cause impaired development of platelets (PLT), leading to microthrombocytopenia. Those disorders induce also presence of skin lesions- purpura, petechiae and eczema. WAS predisposes to the development of autoimmune diseases and lymphomas. It is much more common in boys with a frequency of 1: 250,000 births. Hematopoietic stem cells transplantation (HSCT) is the only available treatment option that has a chance of providing a permanent cure.

**Case report:** We present the case of a 14- month-old boy born on time with 10 points of the Apgar scale, with no disease sings. From the 7th day of life appeared chronic features of upper respiratory tract infections and skin lesions of eczema and petechiae on the cheeks and nates. In the following weeks bloody diarrhoea occurred, which resulted in admission to the hospital. At the hospital a blood count was performed, which showed significant thrombocytopenia (PLT=31’000/µl). Leukaemia was suspected but it was excluded by bone marrow biopsy. After a deepen interview, especially the family history, suspicion of WAS was made. For future diagnosis, the patient was transferred to The Children’s Memorial Health Institute in Warsaw. Accept genetic test, he had there colonoscopy, which revealed ulcerative colitis (UC). In the ninth month of life, based on genetic studies, WAS was confirmed and a proper therapy was implemented, which together with steroid therapy for UC, resulted in a significant clinical improvement. In the meantime, the patient was hospitalized because of recurrent infections and the purpose of transfusion of PLT (the lowest level of PLT found was 2000/mm3). Currently the patient is being prepared to the HSCT.

**Conclusions:** WAS is a syndrome that appears through three main, seemingly unrelated, symptoms- recurrent infections, thrombocytopenia and skin lesions. Efficient diagnosis enables quick implementation of effective therapy. This case shows us, we cannot forget about rare diseases during the diagnosis process.

**Title:** Diagnostic dilemmas with classification of melanocytic lesions – a navel approach to lesions with indeterminate biological behaviour

**Authors:** Kinga Szczepaniak, prof. Anna Nasierowska-Guttmejer

**Session:** NON - SURGICAL CASE REPORT

**Introduction:** Among the spectrum of melanocytic lesions, there is a group of atypical lesions with borderline histological features between benign nevi and malignant melanoma. Classification of such nevi could constitute a diagnostical problem, even for experienced dermatopathologists. Therefore, the new diagnostic categories were distinguished to classify these ambiguous lesions, including the term MELTUMP, that refers to melanocytic lesions of unknown malignant potential. For these cases immunohistochemical analysis of specific markers: HMB45, p16 and ki67 may be applied to improve the diagnosis.

**Aim of the study:** Based on a literature review and our experience with cases diagnosed in our department we aimed to describe the most problematic issues, that clinicians could encounter during the diagnostic procedure.

**Materials and methods:** Two cases with the diagnosis of MELTUMP were reassessed after immunohistochemical examination of Melan A, HMB45, p16 and Ki-67 expression.

**Results:** Microscopically, the nevi were described as brown, irregular lesions with indistinct border of 6 mm and 8 mm in diameter. In microscopic examination we observed intraepithelial nests of atypical melanocytes with radial growth pattern (lesion I) or radial and vertical growth. Immunohistochemical staining revealed partial loss of HMB45 expression and heterogenous expression of p16.

**Conclusions:** The diagnosis of MELTUMP by consultant pathologists reflects the difficulty of classification with accuracy lesions that showed histological features of various atypical tumors or malignant melanoma. Immunohistochemical staining may constitute a useful tool for determination of biological potential of that lesions.

**Title:** Unexpected diagnosis of germ cell tumors in patient with primary amenorrhea

**Authors:** Nadia Świątek, Jagoda Kruszewska

**Session:** NON - SURGICAL CASE REPORT

**Introduction:** Primary amenorrhea is defined as lack of menarche stated at the age of 16. This condition may be caused by many abnormalities, including anomalies of the outflow tract, hypothalamic disorders or ovarian dysfunction. Rare cause of the recent is gonadal dysgenesis coexisting with 46,XY karyotype (Swyer syndrome). The risk of developing neoplasm reaches 30-45% in the disorder.

**Case report:** A 17 year old patient was admitted to the Department of Gynecological Endocrinology because of primary amenorrhea. Hormonal profile indicated hypergonadotropic hypogonadism. (FSH 70 mIU/ml, estradiol 10pg/ml). Serum testosterone was within reference range. Ultrasonography determined presence of the uterus and no ovaries. Her karyotype turned out to 46,XY. The patient was diagnosed with pure gonadal dysgenesis (Swyer Syndrome). Due to high risk of tumors development in the disorder, prophylactic gonadectomy was performed. Intraoperative histopathological assessment confirmed malignant process within streak ovaries. There was no further surgery extension. Gonadoblastoma with foci of malignant dysgerminoma were described bilaterally within dysgenetic gonads. The surgery appeared to be radical and neoplasm confined only to streak ovaries. The patient remains under oncological observation.

**Conclusions:** In case of primary amenorrhea not only blood test for certain hormone levels, pelvic ultrasonography but also karyotype test should be considered. If Y chromosome is present in the phenotypically female patients, prophylactic gonadectomy should be performed. In Swyer Syndrome, gonadoblastoma, a benign tumor is mostly prevalent. But it should be kept in mind, that it may coexist with foci of malignant dygerminoma.

**Title:** Rare consequences of a saturday party - Valsalva retinopathy

**Authors:** Paulina Pełnikowska, Monika Gabriel, Agata Grzegorzewska, Wawrzyniec Skoczylas

**Session:** NON - SURGICAL CASE REPORT

**Introduction:** Valsalva retinopathy is a rare primarily preretinal and subhyaloidal hemorrhage with sudden loss of vision, which is mostly unilateral or bilaterally asymmetrical. The name of disease comes from the Valsalva maneuver. Sudden increase of intrathoracic or intra-abdominal pressure against a closed glottis leads to a rapid rise of intravenous pressure within the eye, causing retinal capillaries to spontaneously rupture leading to extravasation of blood. The epidemiology of VR is difficult to ascertain considering the rare nature of the condition. Multiple etiologies have been described, including pregnancy, labor, ocular massage, coughing, vomiting, sneezing, dancing, straining for stool, lifting, sexual intercourse, compression injuries and heavy exercise. Treatment in most cases involves only observation, as this disease usually passes without complications. Laser membranotomy can be considered for the treatment of large macular subhyaloid hemorrhages. Prognosis is generally good with complete recovery of vision.

**Case report:** 27 years-old man was referred to hospital 3 days after a bachelor party with central scotoma in the left eye, which he had noticed on sunday morning. He denied any trauma, surgeries or physical effort, but didn't give any details about the party, during which he could have been exposed to many possible causes of VR. Also, according to the patient, the vision in his right eye has been weaker since birth. The patient was diagnosed with reduced visus, macular hemorrhage and blurred inner retinal layers (in SOCT) of the left eye during physical examination. There were no other abnormalities found during the examination. Hospitalization was not necessary. Medicaments, alcohol abstinence as well as avoidance of strenuous activities and heavy lifting were recommended to the patient. During 1,5 month follow up all abnormalities disappeared. Patient didn't appear on the last follow up visit.

**Conclusions:** Valsalva retinopathy is an extremely rare condition and its epidemiology is difficult to establish. Since young adults are frequently exposed to possible causes of this disorder, they may even be at a higher risk of its occurrence. Valsalva retinopathy requires proper differentiation from other chorioretinopathies, for suitable recommendations can accelerate recovery and decrease risk of recurrence, as incorrect diagnosis and treatment could lead to unnecessary complications and disease progression.

**Title:** Long-term extracorporeal membrane oxygenation as a bridge to lung transplantation due to pulmonary embolism complications.

**Authors:** Damian Maruszak, Marcelina Łazaj, Maria Królikowska, Małgorzata Kowacka

**Session:** SURGICAL CASE REPORT

**Introduction:** Extracorporeal membrane oxygenation (ECMO) is a method of removing the carbon dioxide and oxygenating the blood outside the patient's body. This system temporary substitutes the heart and/or lung function, when they are unable to provide an adequate amount of gas exchange or perfusion to sustain life. ECMO will not cure the inefficient organ but could provide precious time to take up other action by medical staff. Long-term extracorporeal membrane oxygenation could be considered as a bridge to lung transplantation.

**Case report:** In May 2018 a 42-year-old patient with pulmonary embolism (PE) was admitted to Silesian Centre for Heart Diseases (SCCS). He was presenting symptoms such as dyspnoea, tachypnoea, central cyanosis and progressing cardiogenic shock, hence qualified for surgical embolectomy. The patient's severe and hemodynamic instable condition required ECMO support during the live saving operation. Many emboli were removed from the right atrium and pulmonary arteries. After reintroduction of pulmonary circulation, a massive bleeding occurred towards middle lobe of the right lung, hence surgeons had to perform its resection. When the patient was stabilised, there were two attempts to wean off ECMO. However, both unsuccessful due to the right ventricle overload, no response to inotropic drugs and worsening gasometry parameters. During the next two months, while waiting for matching donor to be reported, the patient was relatively stable apart from some infection episodes and suicidal attempt. Finally, after 84 days on ECMO support, the patient underwent a left lung transplantation. After two days ECMO was weaned off and mechanical ventilation was applied. In October 2018 the patient was discharged from hospital in good general condition.

**Conclusions:** ECMO could be used as a bridge to transplantation but with every day that passes risk of complications increases. However, this case report shows a long-term use of ECMO as a bridge to lung transplantation. In severe cases such like this, a long-term ECMO should be considered as an effective method of saving patient's life.

**Title:** Subtotal adrenalectomy as a option of treatment- case report

**Authors:** Joanna Jamiołkowska, Agnieszka Popławska, Hanna Ratyńska

**Session:** SURGICAL CASE REPORT

**Introduction:** It is estimated that high blood pressure affects almost half of the population and it is one of the most important risk factors for the cardiovascular disease, that are known to be responsible for 50% of deaths in Poland. The process of diagnosing resistant hypertension requires a thorough analysis and an elimination of other organic causes before its idiopathic origin is concluded.

**Case report:** The 68 year old patient was admitted to the hospital with a CT diagnosed tumour of the right adrenal gland with measurements of 10mm x 21mm. For 5 years the patient has been complaining about dizziness and has been experiencing high blood pressure regardless of the medications that the patient took could not always be controlled. In January 2018, patient had a heart attack, which was luckily quickly diagnosed and controlled. Since that time, the patient was still experiencing spikes in the blood pressure (220/110mmHg). The patient was admitted in October 2018 to the Endocrinology Department with a CT diagnosed tumour. Following results were obtained: 24-hour urinary free cortisol (UFC) excretion (114,2 ug/24h), Urinary free cortisol was in reference range (60,1 ng/ml), metanephrine (313,2 ug/24), decreased plasma renin activity, normetanephrine and 3-methoxytyramine, aldosterone were in the reference rage. The clinical assessment along with the levels of the metanephrine indicate the importance of surgical removal of this adrenal tumour. In the right adrenal gland there was a single hipodensive abnormality, correct perfusion in both renal arteries shown in the Doppler's USG of renal arteries. The patient has been qualified for organ preserving endoscopic retroperitoneal adrenalectomy carried out from posterior approach.The surgery followed through without any complications with only minor fluctuations in blood pressure. The patient was discharged home next day in a stable condition.

**Conclusions:** Organ preserving surgery avoids steroid supplementation in more than 80% of cases. It provides better comfort of living for the patients and reduces the risk of complications connected with chronic oral steroids administration. Taking all of that into consideration, this method is worth to consider in cases where lesions in adrenal glands are insignificant.

**Title:** Different aspect of Cesarean section - is it always the best choice? A case report.

**Authors:** Joanna Pilarska, Aleksandra Matonóg, Paulina Sieradzka, Alicja Kałuska, Mateusz Szul

**Session:** SURGICAL CASE REPORT

**Introduction:** Uterine rupture is a rare peripartum complication associated with a high incidence of fetal and maternal morbidity and mortality. It is defined as a full-thickness separation of the uterine wall and the overlying serosa. This condition affects less than 1% of pregnant women. Uterine rupture occurs mostly in women with uterine scars from previous Cesarean deliveries or other uterine procedures in history like myomectomy. Clinical symptoms of uterine rupture may include abdominal pain, especially in specific areas, abnormal fetal heart activity, vaginal bleeding, maternal tachycardia, hypovolemic shock or haemorrhage.

**Case report:** 24-years old woman was admitted to the Center of Woman's and Child's Health in Zabrze at 33rd week of her third pregnancy. The patient complained of increasing abdominal pain in the place of scar after previous Cersarean sections. She had a history of two Cersarean delivers in 2014 and 2015. At first the CTG record was correct but after some time fetal bradycardia appeared. Disintegration of the lower part of the uterus and ablation of the placenta were also suspected. Due to all those symptoms the patient was categorized for immediate termination of pregnancy by Cesarean section. During the procedure an uterine rupture was revealed. The lower part of the uterus was disintegrated. There was a huge risk of fetal damage. Strangely enough, in spite of all medical issues, the child came to the world and rated Apgar 10. It was 2310 grams and 49cm. What's more interesting the patients uterus wasn't removed after the procedure and her postoperative period was complicated only by anemia. The woman didn't suffer from other complications.

**Conclusions:** A woman's risk of uterine rupture increases with every Cesarean section. The signs and symptoms of this condition are nonspecific, which makes diagnosing difficult. The longer it takes to diagnose and respond to a uterine rupture the more likely are serious complications. This condition can lead to child and placenta dislocation to abdominal cavity through the uterine wall, putting women at increased risk for heamorrhage and fetal for higher risk of neurological complications. It can even cause maternal and fetal death. Extensive hematoma or rupture of the uterine vessels often don't allow to control the bleeding without a complete excision of the uterus. This case shows that proper proceeding even in such serious medical condition as an uterine rupture can lead to successful delivery without dangerous complications for mother and child. Women are still not aware of consequences attached to ceasarian section. It is becoming more and more popular way to terminate pregnancies. Therefore, increasing women awarness about risks and complications after this procedure seems to be very important in gyneacologist work as long as Cesarean section is available for request.

**Title:** Rectal malformation, mass in the presacral space and changes in the sacrum bone as symptoms of Currarino syndrome in a 1-year-old female patient

**Authors:** Katarzyna Lipa

**Session:** SURGICAL CASE REPORT

**Introduction:**The Currarino syndrome is a triad of symptoms associated with the occurrence of anal malformation, mass in the presacral space and the sacrum anomaly. It is inherited in an autosomal dominant manner, and de novo mutations are also found. Currarino Triad is a rare syndrome with a prevalence of 1-9 / 100,000 births. Only in 20% of patients develop a full triad of symptoms.

**Case report:** The patient is a 1-year-old girl, born in 40 Hbd, who went to the pediatric surgery ward on the second day of life due to the problem of donating meconium. Imaging tests (USG and X-ray of the abdomen) showed obstruction of the gastrointestinal tract. In colonoscopy, enlargement of the large intestine with numerous fecal masses and narrowing at the rectal-esophageal border was revealed. In the 7th day of life, therefore, a laparotomy was performed, during which the rectum was enlarged and a two-barrel colostomy was performed on the transverse colon. In the 9th month of life, the patient went to the hospital again for planned, further diagnostics. The stoma infusion showed significant stenosis of the distal colon with the widening of the intestine before the narrowed part. An operation to remove a fragment of the altered intestine has been planned. Before the surgery, ultrasound and x-ray abdominal tests were performed, which due to the gases did not show clear pathologies. The laparotomy procedure revealed intestinal adhesions, the incorrectly built lower part of the sacrum bone and the associated pathological mass in the presacral space. Due to the suspicion of anterior hernia, the rectal reconstruction was postponed, only a single-barrel colostomy was established. Specimens for histopathological examination were also collected. On the fourth day after surgery, in the magnetic resonance examination of the lower pelvis and the lumbar spine were visualized congenital defects of the sacral spine and the pathological fluid reservoir in the presacral space of 6x4x3cm, which did not connect with the spinal canal. This confirmed the suspicion of the Currarino syndrome with the full triad of symptoms. The patient is currently in the ward waiting for further treatment.

**Conclusions:** X-ray examination provides only information on the presence of changes in the presacral space, however, as in the presented clinical case, it is often difficult or does not give a full answer to the question about the origin of the change. Only the magnetic resonance test is able to determine the nature of the pathology and confirm possible anomalies in the construction of the sacrum.

**Title:** Intrauterine myelomeningocele repair (IUMR) by open fetal surgery - case report

**Authors:** Martyna Gawęda, Karina Sypek, Paulina Kurdyś, Michał Śliwa, Anastazja Pandel

**Session:** SURGICAL CASE REPORT

**Introduction:** Myelomeningocele (MMC) is a developmental defect occurring between 21-28 days of fetal life as a result of abnormal neurulation process. In Poland, the incidence is estimated at 2 per 1000 live births, which may result as 400-500 new cases per year. IUMR by open fetal surgery (OFS) is performed in the Department of Gynaecology, Obstetrics and Gynaecological Oncology of Silesian Medical University in Bytom since 2005. This is currently the centre with the largest number of surgeries carried out in Europe.

**Case report:** The patient in second pregnancy gestational age (GA) 23 week 1 day admitted to the Center with the fetal MMC detected in the second prenatal examination for further evaluation and to determine possible perinatal intervention. USG and fetal MRI were performed and have shown the presence of the cleft gate at the lumbar segment L3/L5 with the hernia sac. Supratentorial symmetrically widened ventricular system 15mm. The present displacement of hindbrain structures - Chiari II Malformation (CM II) second degree. Placenta was located on the front wall of uterus. After completion of diagnostics and final qualification by members of fetal surgery team, the patient was qualified according to MOMS guidelines and operated in 24w1d. The location and type of MMC was confirmed intraoperatively. IUMR was performed by tension method without the use of synthetic materials. The patient underwent postoperative antibiotic therapy. Patient did not require additional tocolysis (Fenoterol, MgSO4, Atosiban). During the whole course of pregnancy, fetal health condition was monitored (weekly measurements of fetal weight gain, AFI and KTG evaluation). The pregnancy ended by scheduled caesarean section in 38w2d. A female neonate was delivered, reported weigh 3100g, length 53 cm, Apgar scale 10/10. In the central nervous system ultrasound after birth, reduction of hindbrain herniation by I degree, the width of lateral ventricles was reduced to 11 mm. Full mobility of lower limbs and a properly healed OFS scar were confirmed. The child did not require further surgical interventions.

**Conclusions:** IUMR, by restoring proper circulation of cerebrospinal fluid, allows to reduce hydrocephalus, reduction of hindbrain herniation and reduction of the frequency of intraventricular valve insertion at birth. OFS also has neuroprotective effects such as protection of the spinal cord against adverse effects of amniotic fluid and its mechanical irritation.

**Title:** Patient with atypical Cushing Syndrome - case report

**Authors:** Agnieszka Popławska, Hanna Ratyńska, Joanna Jamiołkowska

**Session:** SURGICAL CASE REPORT

**Introduction:** Cushing syndrome diagnosis is often difficult, because few of the symptoms or signs are pathognomonic of this syndrome. Adrenal masses are discovered incidentally at autopsy or by radiographic studies in 1.3 to 8.7 percent of adults, more than 99 percent of whom do not show symptomatic adrenal disease. Adrenal carcinoma and adenoma cause a similar number of cases of Cushing's syndrome in most series.

**Case report:** The 54 year old patient was admitted to the Surgery Department for a planned adrenalectomy. In patients history the main problem was high blood pressure, headaches and heart palpitations. There were no real symptoms that would indicate Cushing's syndrome. In January 2019 CT showed presence of a left adrenal tumour on the outer arm measuring 48x38mm and density- 3HU. Following results were obtained: decreased concentration of ACTH (<1,5pg/ml), 1 mg dexamethasone suppression test (DST)24-hour urinary free cortisol (UFC) excretion (316ug/24h), but level of normetanephrine and 3-methoxytyramine were normal. The high blood pressure was normalised after administration of hypotensive drugs. The patient was qualified for surgical removal of the left adrenal tumor. Adrenalectomy was in this case performed transabdominally with the anterior approach as this technique is considered to have better prognosis for the patient and it uses minimally invasive surgery techniques. The surgery was carried out without any complications and the full sized tumour was successfully removed and sent for histopathology examination.The patient was discharged home on 17/04/2019 in a stable state with a letter of referral to continue ambulatory treatment.

**Conclusions:** The diagnosis of Cushing's syndrome is considered to be very difficult. This is based on the fact that symptoms of developing Cushing syndrome can be very subtle and they can be difficult to differentiate from patients that suffer from hypertension or diabetes. This case is a pure example of how not all patients show characteristic symptoms or appearance that is often connected with Cushing syndrome, it also highlights the importance of differential diagnosis.

**Title:** Mysterious case of 36 year old woman - a function of DRC in diagnostic process

**Authors:** Aleksandra Polak, Michał Sankowski, Natalia Królik

**Session:** SURGICAL CASE REPORT

**Introduction:** Direct radionuclide cystography (DRC) is the metod that can be useful in diagnosing vesical fistule. Ionising radiation emitted by radiolabelled saline solution instilled directly into the bladder is measured by gamma camera.

**Case report:** A 36-year-old female patient underwent a laparoscopic surgery to remove a uterine fibroid. The procedure failed to relieve the pelvic pain, although its nature changed. After a period of observation, the patient was re-admitted to hospital on suspicion of a vesico-uterine fistula to be differentiated with endometriosis. Diagnostic investigations — cystography, cystoscopy, computed tomography and magnetic resonance — did not reveal a fistula. Laparoscopy was performed, with a possible biopsy in order to eliminate endometriosis. The result was negative, but chronic progressive reactive/inflammatory lesions were noticed, possibly indicating the presence of a vesicoperitoneal fistula. Therefore, a direct radionuclide cystography was performed. The scintigraphic images single-photon emission computed tomography (SPECT/CT) showed a radioactive spot, indicative of a vesico-peritoneal fistula. The fistula was treated for three months by catheterisation of the urinary bladder. The follow-up SPECT-CT did not reveal any urine leakage from the bladder. The clinical symptoms disappeared as well

**Conclusions:** The above case confirms the usefulness of the DRC method for diagnosing vesico-peritoneal fistulae, especially small-to-moderate ones. It is connected with the high sensitivity of radioisotope imaging techniques. The use of hybrid devices, i.e. a gamma camera combined with a CT scanner makes it possible to superimpose one type of image over the other, which significantly improves the precision of the anatomical localisation of a given lesion.

# Pharmaceutical Sciences Block

**Jury:**

Iga Hołyńska – Iwan, PhD

Bilski Piotr, PhD

Krzysztof Goryński, PhD

**Moderator:**

Katarzyna Lipa

Kinsi Ahmed

**Title:** The effect of resveratrol and piceatannol on the degree of expression of SIRT1 and SIRT2 genes in UV-irradiated keratinocytes in an in vitro model

**Authors:** Julia Stępień, Tadeusz Tadrowski, Małgorzata Grochocka, Olga Socha, Agnieszka Karwowska, Jagoda Błaszkiewicz, Paulina Czarzyńska

**Session:** Genetics & Molecular Biology

**Introduction:** Natural stilbenes are plant phytoalexins which have antioxidant and photoprotective properties. The group of these compounds includes, among others, resveratrol and piceatannol (3,3`, 4,5`-tetrahydroxy-trans-stilbene), which are activators of SIRT1 and SIRT2 genes in cells. Sirtuins are nicotinamide adenine dinucleotide+-dependent deacetylases. Sirtuin activity is linked to gene expression, lifespan extension, neurodegeneration, and age-related disorders. SIRT1 can activate stress defense and DNA repair mechanisms, and therefore aids in the preservation of genomic integrity. SIRT2 is a tumor suppressor gene that has an essential role in maintaining the integrity of mitosis. Its dysfunction leads to genetic instability and tumorigenesis

**Aim of the study:** This work aims to determine the influence of resveratrol and piceatannol on the level of SIRT1 and SIRT2 gene expression at mRNA level, in Ker-CT irradiated with UVB keratinocytes and cytotoxicity assessment of tested compounds in in vitro culture.

**Material and methods:** Ker-CT keratinocytes were treated with resveratrol and piceatannol, which was followed by exposure to UVB rays. Exposure of keratinocytes to UVB radiation causes their oxidative damage and decreased survival. Cytotoxicity was determined through MTT assay. The MTT test is based on the ability of mitochondrial dehydrogenase enzyme to convert orange, water-soluble MTT tetrazolium salt into a formazan colored product of the above reaction. Only live cells are able to produce formazan, which allows for quick and accurate determination of the percentage of functional cells and the effect of test factor on the viability of any cell line. In the study, were use MTT tetrazolium salt (3-(4,5-Dimethyl-2-thiazolyl)-2,5-diphenyl-2H-tetrazolium bromide)- MTT solution in 50mg PBS. Absorbance were measured at a wavelength of 565 nm at room temperature using an Eppendorf Bio-Spectrometer Kinetic spectrophotometer and Eppendorf Vis Cuvetess disposable cuvettes. The expression level of SIRT1/SIRT2 genes was examined using the qRT-PCR reaction.

**Results:** UVB radiation significantly reduces the survival of keratinocytes. Resveratrol demonstrates protective properties even at low concentrations; on the other hand, piceatannol has no protective properties. The cytotoxicity of piceatannol is much higher than that of resveratrol. Resveratrol increases the expression level of SIRT1 and SIRT2 genes in contrast to piceatannol.

**Conclusions:** UVB irradiation reduces the percentage of viable keratinocytes. The presented results confirm the protective activity of resveratrol and exclude piceatannol as an activator.

**Title:** The study of L- and D-2-hydroxyglutarate enantiomers at diagnosis of de novo AML and MDS

**Authors:** J. Szpotan, M. Modrzejewska, K. Linowiecka, A. Siomek-Górecka, D. Gackowski, M. Foksiński

**Session:** Genetics & Molecular Biology

**Introduction:** Alterations in genes involved in epigenetic regulation and cellular metabolism are implicated in the pathogenesis of acute myeloid leukemia (AML) and myelodysplastic syndromes (MDS). It is reported that mutations in IDH1/2 genes occur in 10% to 20% of patients with AML and between 3% to 12% in patients with MDS. IDH1 and IDH2 enzymes normally catalyze a Krebs cycle-like reaction, namely the oxidative decarboxylation of isocitrate to 2-ketoglutarate (2-KG) to produce NADPH from NADP, which is associated with oxidative stress response and several metabolic pathways. Mutant IDH enzymes catalyze reduction of α-KG to the (R) enantiomer of 2-hydroxyglutarate (2-HG), which can lead to altered gene expression. Mutations in IDH affect three specific arginine residues R123 in IDH1 and R140 or R172 in IDH2. Although the oncogenic mechanism of IDH1/2 mutations remains under investigation, presence of these mutations and products of IDH genes could be relevant for diagnosis, prognosis and treatment of a subset of patients with AML and MDS.

**Aim of the study:** The aim of this study was to examine whether the level of L- and D-2-HG enantiomers in urine or plasma could relevance as a prognostic biomarker in patients with AML and MDS.

**Materials and methods:** We have examined 3 groups: healthy controls (n=15), patients at diagnosis de novo AML (n=18) and MDS (n=10). We have measured the level of L- and D-2-HG using liquid chromatography–tandem mass spectrometry after derivatization with DATAN (Di-O-acetyl-L-tartaric anhydride) in urine and plasma.

**Results:** Our preliminary research shows that level of D-2-HG and D/L 2-HG ratio are notably increased 10-100-fold in AML (22%) and MDS (10%) patients in urine.

**Conclusions:** The increased concentration of L- and D-2-HG in the urine or high D/L 2-HG ratio of patients with AML and MDS could be related to mutations in IDH1/IDH2 genes what can lead to cancerogenesis. The noted value of urine 2-HG levels support the use of non-invasive biomarkers and/or in novel diagnostic systems for AML and MDS. This work was supported by the Polish National Science Center grant number DEC2015/19/B/NZ5/02208.

**Title:** Vitamin D receptor mutations influence on course of Parkinson's Disease in patients treated with L-Dopa - follow-up study

**Authors:** Olaf Chmura, Martyna Kościuszko, Barbara Zapała

**Session:** Genetics & Molecular Biology

**Introduction:** Parkinson's disease (PD) is second most often occuring neurodegenerative disease after Alzheimer's disease. Age is being considered the most important factor for PD risk. Vitamin D(VD) is steroid hormone crucial for calcium homeostasis and bone metabolism. Contrary to other vitamins, VD is being produced in human organism in presence of sunlight. VD metabolism is multi-factorial process which involves specific enzymes of liver and kidneys with 1,25-D3 being active product. Latest research indicated that VD modulates over 1000 genes involved in cellular growth, protein synthesis and immunological processes. Several animal studies showed potential protective attributes of VD in dopamine cells.

**Aim of the study:** The aim of the study was to analyze Vitamin D receptor (VDR) gene sequence and to find connection between its mutations and prevalence of several PD side effects including levodopa-induced dyskinesia.

**Material and methods:** Sequential analysis of VDR gene was performed on genomic DNA isolated from peripheral blood leukocytes of 100 patients with diagnosed Parkinson's Disease treated with Levodopa. Sequencing was performed in 3130xl Genetic Analyzer(Applied Biosystems) and statistical analysis was conducted using AB DNA Sequencing Analysis Software v. 5.2.(Applied Biosystems).

**Results:** From analyzed VDR gene fragments exon 1 turned out to be the most interesting one. Mutation of "start"(ATG) codon was detected in most cases. We have also detected several connections between detected loss-of-function mutation and clinical phenotype including age of PD occurrence, clinical advancement and levodopa side effects prevalence.

**Conclusions:** We conclude that due to connections between VDR Gene mutations and clinical consequences gene sequencing may in the future be a viable way to predict future Parkinson Disease course.

**Title:** Which sample preparation technique might reduce small lab animals used for experiments?

**Authors:** Paulina Goryńska, Krzysztof Goryński, Barbara Bojko

**Session:** Genetics & Molecular Biology

**Introduction:** Large amount of sample collection is most often a significant limitation of conducting experiments using small laboratory animals. The crucial step for performing experiments is appropriate sample preparation which would offer the opportunity of merging sampling and its preparation into a single step. Over the last few years Solid Phase Microextraction (SPME) as a sample preparation method has been applied for therapeutic drug monitoring using different matrices. Its exceptional character like biocompatible material used for manufacture and small size of the probe effect to be a promising tool also for in vivo pharmacokinetic analysis.

**Aim of the study:** The aim of the investigation was validation SPME method for determining the concentration of antifibrinolytic drug in small amount of rat plasma samples and consequently to minimize the mortality of laboratory animals by working on the same individuals.

**Materials and methods:** Present study was performed using SPME as a sample preparation method combined with high performance liquid chromatography and mass spectrometer Shimadzu LCMS8060. The proposed method SPME in thin film format was optimized into rat plasma samples and validated according FDA criteria in terms of precision, accuracy, linearity etc.

**Results:** In present protocol satisfactory results were obtain in terms of precision within and between days which were below 20% for the lowest concentration 10 µg/ml and less than 15% for higher concentrations which complies with the FDA guidelines. The accuracy is also within the expected range of 80% -120% for the lowest and 85% -115% for the remaining concentrations. For concentrations 10-300 µg/ml series a satisfactory linearity level of calibration curve were obtained.

**Conclusions:** The optimized sample preparation protocol merged with high sensitive instruments for determination of antifibrinolytic drug from small plasma volume 10 µl is suitable for laboratory experiments using small animals. Present protocol has been applied to analyzed hundreds samples as a proof of concept in cooperation with a pharmaceutical company.

**Title:** The impact of sanguinarine on non-small-cell lung cancer cells line A549 with downregulated expression of profilin-1.

**Authors:** Wioletta Zielińska, Marta Hałas-Wiśniewska, Klaudia Mikołajczyk, Magdalena Izdebska, Alina Grzanka

**Session:** Genetics & Molecular Biology

**Introduction:** Due to the late diagnosis, cancer resistance to conventional treatments and high invasiveness, non-small cell lung cancer (NSLC) remains a serious health care problem. For this reason, more and more attention is paid to the anti-cancer activity of natural substances. One of them is the sanguinarine (SAN) alkaloid derived from the Sanguinaria canadensis plant. The actin cytoskeleton is associated with all the most important proceses occurring within the cell, including the cancerous one. The dynamics between actin forms closely correlates with the state of the cell. In turn, actin-binding proteins are responsible for changes in the structure of this cytoskeleton element. One of them is profilin-1 (Pfn-1), which may regulate the growth and stabilization of actin filaments as well as their remodeling. Because of this, the cells can move and change their shape according to their needs.

**Aim of the study:** The aim of the study was to assess the impact of sanguinarine on NSLC cells line A549 together with Pfn-1 level manipulation.

**Material and methods:** The material used in the study was commercially available A549 cell line. In order to downregulate the expression of Pfn-1, a transfection with siRNA was used. Subsequently, the effect of alkaloid on the A549 naïve and transfected cells was assessed by analyzing cell death (double staining with propidium iodide and annexin V) and immmunofluorescent labeling of the major cytoskeleton proteins. The influence of selected factors on the migratory potential of cells was verified by wound healing assay.

**Results:** Our research suggests that SAN has a cytotoxic effect on A549 cells resulting in an increase in the late-apoptotic and necrotic cells. Lowering the level of profilin-1 expression leads to an increase in alkaloid action. In the case of immunofluorescence labeling of F-actin and vimentin, significant differences in the structure and intensity of fluorescence were observed indicating limited invasiveness of A549 cells. These observations confirmed the wound healing assay in which SAN-treated naïve A549 cells migrated faster than those transfected with siRNA and treated with the compound.

**Conclusions:** SAN has a cytotoxic effect on NSCLC cells and significantly inhibits their migratory potential. This effect is compounded by the lowering of the Pfn-1 level. The combination of natural substances along with the manipulation of genes is an innovative and promising direction of research in cancer biology.

**Title:** Evaluation and comparison of four different quinolones effect on the growth of urinary bladder cancer cells, an in vitro study

**Authors:** Zuzanna Fekner, Kamil Szeliski, Tomasz Kloskowski, Tomasz Drewa, Marta Pokrywczyńska

**Session:** Genetics & Molecular Biology

**Introduction:** The main reason of high number of failures in the bladder cancer treatment is insufficient efficiency of currently used chemotherapeutics, that is why many studies focus on finding new, more effective ones. Levofloxacin, ciprofloxacin, norfloxacin and enrofloxacin show anti-cancer properties due to inhibition of topoisomerase II or IV, which leads to the cell cycle arrest and in consequence to cells death. Together with high concentrations achievable in urine these quinolones seem to be promising candidates for the bladder cancer treatment.

**Aim of the study:** Aim of the study was to evaluate and compare the effect of levofloxacin, ciprofloxacin, norfloxacin and enrofloxacin on the growth of urinary bladder cancer cells in vitro.

**Materials and methods:** This study was conducted on human urinary bladder cancer cell line (T24). Cells were seeded on a multi-well plates and were treated with levofloxacin, ciprofloxacin, norfloxacin or enrofloxacin for 24 and 48 hours at concentrations ranging from 25 to 800 µg/ml. Viability evaluation based on the exposure time and drug concentration was performed using the MTT assay. Obtained results were used to calculate concentrations reducing cell viability by 10, 50 and 90% which were next confirmed by real-time cell analysis using xCELLigence RTCA system. Analysis of cell cycle and apoptosis were also performed.

**Results:** The results of this study indicate that levofloxacin, ciprofloxacin, norfloxacin and enrofloxacin exhibit cytotoxic properties on tested bladder cancer cell line. The results of the MTT analysis showed that cell viability decreased with increasing exposure time and drug concentration. MTT assay showed that the most effective of the studied quinolones was ciprofloxacin. Norfloxacin was the most effective in higher doses. Real-time cell analysis confirmed obtained results. Cell cycle analysis showed increase in the number of cells in the G2/M-phase after exposure to all quinolones. High concentrations of tested drugs led to significant increase in late apoptotic and necrotic/dead cells.

**Conclusions:** Obtained results together with the favorable pharmacokinetic parameters of tested quinolones suggest that these drugs can be potentially used for urinary bladder cancer treatment.

**Title:** Plasma metabolomic profiling of amino acids as a potentail method for detection nervous system diseases and mental disorders.

**Authors:** Agata Tadeja, Anna Welz, Marcin Koba

**Session:** Pharmacy & Laboratory Diagnostics & Microbiology

**Introduction**: According to the 2001 WHO report, around 450 million people in the world are struggling with nervous system diseases or mental disorders during their lives. Many diseases of this type pose a great diagnostic challenge. Analyzes indicate that in disorders such as Parkinson's disease, Alzheimer's disease, autism, depression or migraine, helpful in detecting the disease, as well as its unambiguous diagnosis, can be biomarkers. It seems promising to use for this purpose metabolites, which are small molecules that reflect the interaction of genetic and environmental factors, easily cross the blood-brain barrier, and their levels can be modified through diet or pharmacological intervention. In addition, the analysis of metabolites in the blood appears to be a valid tool for the analysis and accurate understanding of the metabolic pathways associated with the pathogenesis process.

**Aim of the study:** Analyzes could clarify which of plasma free amino acids play the most significant cause in the pathogenesis of specific diseases or are markers of early pathology.

**Materials and methods:** In most cases, chromatographic analysis using mass spectrometry (LC-MS) performs.

**Results**: Amino acids, not only build proteins, but also play an important role in the metabolism of cells, as neurotransmitters, in the regulation of the immune system and in cell signaling system. Because of that reasons many analyzes have focused on measuring plasma concentrations this group of compounds and consider it as a potential biomarker. It has been shown that levels of amino acids in body fluids of patients, differs in healthy people and among people with nervous system diseases and mental disorders. A similar relationship was found in post-mortem samples of the patients suffering from schizophrenia, and in group of patients with depression, bipolar affective disorder compared to the control group. Branched chain amino acids (BCAAs) seem to be of particular importance here.

**Conclusions:** The metabolic profiling of amino acids can potentially be a tool for the diagnosis of various types of mental disorders and nervous system diseases. This type of analyzes may also complement other diagnostic methods as well as monitoring the course and treatment in this types of diseases.

**Title:** The use of phytotherapy among pregnant women

**Authors:** Karina Sypek, Anastazja Pandel, Martyna Gawęda, Paulina Kurdyś, Adrianna Jurkiewicz

**Session:** Pharmacy & Laboratory Diagnostics & Microbiology

**Introduction:** Modern phytotherapy is a part of pharmacology and it is more and more willingly prescribed by physicians. Society strengthens the myth that herbs are gentle and safe for pregnant women, but there is no scientific basis for that belief. What is more, some of them like Thymus vulgaris and Salvia officinalis are contraindicated during pregnancy.

**Aim of the study**: The aim of our study was to assess the use of herbal medicine in pregnant women and evaluate the effectiveness of herbal preparations in frequent pregnant complaints.

**Material and methods:** The research method was the author's anonymous questionnaire dedicated to mothers divided into three categories: the demographic data; review of herbs and their applications, satisfaction. Sheet consists of 75 questions concerning among others: common infections and complaints, combining drugs with herbal preparations and consulting the treatment with gynecologist. The survey was nationwide, 380 women took part in.

**Results:** Results, if possible, are divided into two groups – home method of reducing symptoms and medicinal products and drugs from pharmacy. Phytotherapy is the most often chosen by women in the case of sore throat (64,7%), prevention of stretch marks (64,2%) and immunity improvement (60,8%). Prenalen Gardło was the most common medical product for sore throat (48,96%). The most commonly used method to prevent stretch marks were PALMERS Stretch Marks (19,21%) and Bielenda Sexi Mama (18,71%). The most commonly used method to strengthen immunity was Allium sativum with milk and honey (59,68%) and domestic Allium cepa syrup (46,59%). In the case of rhinitis and sinusitis pregnant women used essential oils for inhaling (42,5%) and rubbing into skin (21,87%). Issla Cassis (19,48%) and brew of Tilia cordata (16,23%) was used for cough. In case of cold and flu the most common choice was Rubus idaeus juice (83,52%). Żuravit is used by 44,91%, Urosept is used by 40,67% in case of urinary symptoms. For constipation and alimentary problems brew of Mentha piperita (48,67%) is the most common home method. In case of nausea, women chose Zingiber officinale (73,04%). To relieve the symptom of heartburn, Linum usitatissimum (15,15%) was used. For problems with lactation they used Femaltiker CHOCO (65,04%). To the question of who recommended an herb administration the most common answer was: physician (47,9%), the Internet (43,9%), family (41,1%), pharmacist (35,3%) and friend (22,4%). Only 37,9% of pregnant women always consulted the use of herbs with their doctors, 38,7% sometimes, 23,4% never. What is important 84,5% of patients always read the leaflet, 12,9% of them not always and only 2,6% never read the leaflet.

**Conclusions:** A significant part of pregnant women chooses treatment with herbs, but only some consulate treatment with a doctor. The effect of herbs treatment was satisfactory for around half of women. More than a half have gone for treatment with herbs ordered by a doctor.

**Title:** Designer drugs analysis using liquid chromatographic methods

**Authors:** Anna Welz, Agata Tadeja, Marcin Koba

**Session:** Pharmacy & Laboratory Diagnostics & Microbiology

**Introduction:** "Designer drugs" are synthetic stimulants that increase or change the body's performance in a non-physiological way, affecting intellectual and physical activity. They have been put on the market as alternative products for illicit drugs. Typically, these are their modified analogues in terms of chemical structure, created to mimic psychoactive effects and elicit potential abuse. “Designer drugs” have a very diverse chemical structure and can be divided into three main groups: synthetic cannabinoids, ketoarylamines and piperazine derivatives. The possibility of modifying each of these structures allows the dynamic formation of new compounds with unpredictable psychostimulatory effects. Individual consumption models to achieve a specific benefit are defined as: experimental, recreational, problem and addiction. A false assessment of the safety of these compounds is the cause of misuse, documented poisonings and fatalities. The composition of sold "designer drugs" is often not specified. The types of substances found in these products and their quantitative proportions are constantly being changed to avoid legal responsibility. It is also common for potential consumers to take different substances simultaneously, which causes additional diagnostic difficulties. The recreational use of "designer drugs" may be associated with the development of serious health complications. New psychoactive substances have an effect on the nervous system and are not a milder form of known drugs. It is very important to successfully diagnose and treat patients with suspected poisoning. For these reasons, a particular and justified challenge is the proper identification and determination of "designer drugs" in preparations and in biological material.

**Aim of the study:** The purpose of this work was to present the possibility of using high-performance liquid chromatography techniques to analysis of new psychoactive substances in biological material (blood, urine). Due to the structural diversity of these compounds, there is no routine analytical approach to different groups of "designer drugs", which was a research problem.

**Material and methods**: All analyses were carried out using high-performance liquid chromatography (HPLC) with DAD detection (diode array detection). Substance standards and enriched biological samples were analysed.

**Results:** Analytical methods were developed using HPLC to identify compounds derived from benzyl and phenylpiperazine, ketoarylamines and synthetic cannabinoids. The obtained results constitute a specific catalogue of chromatograms giving the possibility of identification selected psychostimulants in the analysed samples. The obtained UV / VIS spectra can be used to confirm the presence of a particular compound.

**Conclusions:** The developed chromatographic methods allow identification of the tested compounds. The presented work can be the basis for further advanced scientific research focused on the analysis of "designer drugs".

**Title:** The Milwaukee Protocol and biological characterization of rabies virus

**Authors:** Daniel Wiśniewski

**Session:** Pharmacy & Laboratory Diagnostics & Microbiology

**Introduction:** World literature reports only two cases of application of the Milwaukee Protocol (both successful). A case study from 2005 details the hospitalization of a 9-year-old (Willoughby Jr RE., Tieves KS., Hoffman GM., Et al., Survival after Treatment of Rabies with Induction of Coma, The New England Journal of Medicine, 2005; 352 : 2508-2514), while the study from 2011 concerns a 15-year-old (Centers for Disease Control and Prevention (CDC); Recovery of a patient from clinical rabies - California, 2011, The Morbidity and Mortality Weekly Report, 2012; 61 : 61-65). Warell and Warell describe 5 cases of survival regardless of the protocol in 1970-2000. In each of them, administration of the vaccine did not protect against symptoms (Warrell MJ., Warrell DA., Rabies and other lyssavirus diseases, Lancet, 2004;363:959-969).

**Aim of the study:** The aim of the review paper is the presentation of information on the few cases of experimental rabies therapy collected from the world literature. Since the invention, the Milwaukee Protocol has been recognized as an opportunity to cure symptomatic rabies, previously thought to be absolutely fatal in non-vaccinated individuals. Despite a detailed description of the procedure, there is no precise analysis of its mechanism of action. Interpretation is hampered by a small number of clinical cases. The limited availability of information makes us treat the Milwaukee Protocol only as a therapy without guarantee of success or, on the contrary, as an introduction to in-depth research into RABV biology.

**Materials and methods**: The desk research method gets used for analysis of the world literature about the experimental therapy of human rabies. PubMed Index is involved. The following selection critieria have been applied: publishing in 1977 or later, publishing in the IF periodicals, the 'Milwaukee Protocol'/ 'human rabies pathogenesis'/ 'human rabies epidemiology' search phrases. The total number of the the academic papers (both research and review) determined by the criteria amounts to 42, including 8 in Polish.

**Results:** The chance of curing rabies is increased under the following conditions: young age (the factor with the highest rank), post-exposure vaccine or the Milwaukee Protocol, vaccination before the onset of prodromal symptoms. In addition, the factors are probably: the strength of the body (vitality), the minimum dose of the virus, the infection limited only to the distal parts, genetic predisposition to alleviate the symptoms.

**Conclusions**: So far, 7 people have managed to survive symptomatic rabies, but only one without health consequences. Among the others (most previously vaccinated against rabies) with the exception of one all have suffered severe neurological deficits ("limited survival"). The Milwaukee Protocol has also been successful for the one unvaccinated patient, in whom only a minimal left foot drop has been diagnosed.

**Title**: Epidemiology of microbiological colonization in lung transplant patients.

**Authors:** Emilia Kaczur, Marcelina Miernik, Fryderyk Zawadzki, Marta Wajda-Pokrontka, Magdalena Latos

**Session:** Pharmacy & Laboratory Diagnostics & Microbiology

**Introduction:** Lung transplantation is an effective treatment for many advanced lung diseases. However, immunocompromised patients are more susceptible to infections caused by both conventional and opportunistic pathogens. That is why appropriate empiric antibiotic therapy is of such importance. Early treatment is key to improve survival rate in solid organ transplant recipients with severe infections.

**Aim of the study:** Aim of the study was to describe and characterize bacterial species found in the lower respiratory tract in donor cultures as well as in recipient after the lung transplantation (LTx) and find the most prominent species.

**Materials and methods:** 109 patients who underwent lung transplantation between 2012 and 2018 at the Silesian Centre for Heart Diseases were retrospectively studied. Material for microbiological cultures identification was obtained by performing bronchoalveolar lavage (BAL) first in a donor (before the LTx) than in recipient after the procedure.

**Results**: 87 (80%) had positive cultures from BAL after the transplantation. In donor cultures, Gram-negative bacteria accounted for 62% with S. maltophilia, E. cloacae and E. coli being the most prominent. Methicillin-sensitive Staphylococcus aureus was present among 22% of the patients. 78% of cultures obtained from BAL after the LTx were Gram-negative with P. aeruginosa being the most prominent within this type of Gram-staining as well as the most prominent overall (21%).

**Conclusions:** Gram-negative bacteria were more prominent in both donor and recipient lower respiratory tract. Underlying disease before transplantation plays an important role in the frequency of presence of certain strains and types of bacteria.

**Title:** Oral fluid testing for the detection and quantification of beta-blockers by highly sensitive SPME-LC-MS method

**Authors:** Łukasz Sobczak, Michael Pasek, Barbara Bojko, Krzysztof Goryński

**Session:** Pharmacy & Laboratory Diagnostics & Microbiology

**Introduction:** Beta-blockers are chemically varied class of medicines used mainly in treatment of many cardiovascular conditions since 1960s. Great significance of these drugs for modern pharmacotherapy is perhaps best underlined by the Nobel Prize in Physiology or Medicine awarded to their inventor sir James Black in 1988. That being said, beta-blockers are also used as doping agents in sport. A fact that is often overlooked despite each year tens of athletes test positive for their presence. Due to specific proprieties such as the reduction of muscle tremor and alleviation of psychological tension (hence common use to combat stage fright), beta-blockers are prohibited by the World Anti-Doping Agency (WADA) in disciplines requiring remarkable precision and calmness. List includes archery, billards, darts, golf, motorsports, shooting, skiing, snowboarding and underwater sports. Especially dedicated analytical methods for their detection from plasma and urine, as well as more general method for oral fluid antidoping testing were already published. Following the latest trends in doping control, presented protocol offers reliable method for beta-blockers determination from one of so called alternative matrices - oral fluid.

**Aim of the study:** The main objective was to confirm that the drugs of beta-blockers class could be detected and quantified in oral fluid in accordance with WADA's regulations.

**Materials and methods:** Analytical protocol utilizing solid phase microextraction (SPME) in C18 fiber format for sample preparation and high performance liquid chromatography coupled with tandem mass spectrometry (HPLC-MS/MS) using Shimadzu LCMS-8060 triple quadrupole mass spectrometer for drug separation and detection from spiked samples of human oral fluid was optimized. Permission to conduct experiments involving aforementioned samples was given by the Bioethics Committee of Collegium Medicum in Bydgoszcz at Nicolaus Copernicus University in Toruń (KB 748/2016).

**Results:** The method was validated according to the Food and Drug Administration (FDA) Bioanalytical Method Validation Guidance and fully complies with Minimum Required Performance Levels (MRPL) by the WADA.

**Conclusions:** The proposed SPME-LC-MS analytical protocol could be utilized for antidoping testing or screening for the presence of beta-blockers (as well as other doping agents) from oral fluid, benefiting from the advantages of this matrix. These include non-invasive sample collection and limitation of sample adulteration possibilities, while respecting the privacy of the athletes.

Acknowledgement: The authors would like to acknowledge NCBR (grant LIDER/44/0164/L-9/NCBR/2018), Shimpol and Supelco for their support.

**Title:** Assessment of differential scanning calorimetry application for counterfeit medicines identification

**Authors:** Patrycja Dajnowicz, Magdalena Misiura, Joanna Stelmaszewska, Wojciech Miltyk

**Session:** Pharmacy & Laboratory Diagnostics & Microbiology

**Introduction:** According to WHO (World Health Organisation) reports, one of ten medicines in a world is falsified. It is an essential problem for the effectiveness of pharmacotherapy and patient's safety. Poland is perceived as a high-risk country in terms of counterfeit medicines, also is considered as a transfer country for counterfeit pharmaceuticals to EU. Falsified drugs may contain an active substance in a different, usually smaller amount. In some cases, they may contain only filler substances, such as corn starch, potato starch or chalk, which are intended to ensure the proper appearance of the preparation. Extremely life-threatening are those falsified medicines which contain a substance other than the one written on the packaging, leading to serious toxic effects. Moreover, unhygienic conditions of their production sometimes cause bacteria contaminations. Unfortunately, usually, the appearance of counterfeit medicines is very similar to the original ones. What is needed, is a method that allows assessing the qualitative composition of medicines in a simple and quick way, which would make it possible to recognize falsified medicines.

**Aim of the study:** The aim of the study was to evaluate the application of differential scanning calorimetry (DSC) to identify counterfeit medicines.

**Material and methods:** The materials for the tests were counterfeit samples of medicines: Viagra (sildenafil) in a dose of 100 mg and Cialis (tadalafil) in a dose of 20 mg, received from the National Institute of Medicines. The reference sample was the original medicinal preparations purchased in the pharmacy. Sildenafil and tadalafil are a phosphodiesterase type 5 inhibitors used to treat erectile dysfunction. The study was conducted applying the DSC method. Samples were thoroughly pulverized in a mortar, then they were tested in aluminum crucibles, at programmed temperature conditions, consistent with the melting points of the active ingredients.

**Results:** Results of the study indicated significant differences between heat flux curves of original and counterfeit medical products.

**Conclusions:** The results of the study indicated the possibility of the DSC technique application for counterfeit medicines identification. It is a quick and cost-efficient method, which may be an introduction to the application of subsequent methods to analyze the quality and authenticity of drugs.

# Health Sciences Block

**Jury:**

Leksowski Łukasz, PhD

Szwed Krzysztof, PhD

Styczyńska Hanna, PhD

Bernaciak Elżbieta, PhD

**Moderator:**

Małgorzata Nartowicz

Cristopher Singh

**Title:** Virtual-reality technologies in physiotherapy – the future of rehabilitation

**Authors: Aleksandra Modlińska, Karolina Cięszka, Daria Bieniek, Beniamin Szmelcer, Adrian Zwolinski**

**Session:** Physioterapy & Ortopaedics & Sports Medicine

**Introduction:** Virtual-reality technologies (VR) are very new and developing programs, which use interactive experience of artificial reality in relation to patients who use them. To create this reality, computer programs are used. VR are interactive, real-time, three-dimensional and contain copies of real people, sceneries and events. Different VR systems allow users to immerse in them, which means creating a sense of reality in the virtual world. Studies on VR have been observed for about 15 years. They are based on rehabilitation of patients suffering from balance disorders and having problems with cognitive functions, for example concentration, memory or orientation. Physiotherapy of patients with VR allows to select specific and attractive tasks in the form of exercises, often computer games. In that, the acquired skills and functions in artificial conditions can be used later in everyday functioning. Virtual-reality programs are used in various disease entities. Most often, the studies of the effectiveness of physiotherapy with VR concern neurological rehabilitation – people after strokes, craniocerebral injuries, multiple sclerosis and disturbances of the balance control system caused by aging.

**Aim of the study:** The aim of the study is to present the virtual-reality technologies and their use in rehabilitation to compare different studies and show how valuable they are today.

**Material and methods:** A review of the latest literature using databases of scientific articles, including Google Scholar, PubMed and ResearchGate was carried out. The articles were analyzed in terms of the latest trends in rehabilitation with use of VR and their value for science now and in the future.

**Results:** The analysis of the latest scientific reports shows that the discussed virtual-reality technologies and physiotherapy containing them can significantly improve the functioning of a person suffering from balance disorders or other problems, depending on the type of illness.

**Conclusions:** Virtual-reality technologies are still a growing field. Physiotherapy of people with balance disorders or problems with cognitive functions such as concentration, memory and orientation using VR aims to prevent the additional effects of the disease, such as falls or feeling of confusion. More scientific reports about virtual-reality technologies are needed to show the effect of rehabilitation on a bigger group of people with a specific illness. There is such a necessity to understand the diversity of VR applications.

**Title:** How Ice swimming is affecting outer body temperature?

**Authors: Dariusz Dziarkowski, Szymon Gawrych, Sebastian Szyper**

**Session:** Physioterapy & Ortopaedics & Sports Medicine

**Introduction:** Ice swimming is often practiced by athletes or ordinary people. This activity has its own health beneficial effects like improving immune system or increasing the efficiency of thermoregulation.

**Aim of the study:** The aim of this study was to research how ice swimming affects the process of thermoregulation of the body directly before and after the immersion.

**Material and methods:** 15 participants aged 20-25 (Mean age 23.7 years old, mean BMI: 22.8 ±1.45, number of females: 8, number of males: 7) immersed a cold water (1 degree Celsius) for 3 minutes. Each immersion was preceded by 20 minute warm-up including running, stretching and jumping. The outer body temperature was measured before warm-up and directly after immersion on 29 parts of the body: forehead, occipital part of the head, on hands (palmar and dorsal surfaces), arms (anterior and posterior surfaces), forearms (anterior and posterior surfaces), feet (plantar and dorsal surface), lower legs (anterior and posterior surfaces), thighs (anterior and posterior surfaces), abdomen, chest, back (upper and lower part).

**Results:**The outer body temperature dropped at all tested points. The biggest difference was recorded on the lower back (before immersion 34.3± 1.5 degrees Celsius, after immersion 14.3± 4.9 degrees Celsius, p=0.0000), abdomen (before immersion 33.4± 1.9 degrees Celsius, after immersion 10.3± 4.9 degrees Celsius, p=0.0000) and the dorsal surface of the feet (right foot before immersion 28.4± 2.3 degrees Celsius, right foot after immersion 12.3± 5.1 degrees Celsius, p=0.0000, left foot before immersion 28.0± 2.9 degrees Celsius, left foot after immersion 12.5± 5.1 degrees Celsius, p=0.0000).

**Conclusion:** This study can help to understand the process of thermoregulation in ice cold water, and improve knowledge on the subject.

**Title: Caesarean section and natural delivery - analysis of the prevalence and impact of physical activity during pregnancy on the type of delivery.**

**Authors: Katarzyna Urtnowska-Joppek, Kosma Kołodziej, Karolina Suwała**

**Session: Physioterapy & Ortopaedics & Sports Medicine**

**Inroduction:** Physical activity practiced regularly during pregnancy is a key factor affecting the health and well-being of the mother. Exercises have a positive effect on health by reducing spinal pain, general improvement or lack of physical deterioration, preventing excessive weight gain and improving the well-being of the pregnant woman. Many people are of the opinion that the most important effect of regular physical activity in pregnancy is to increase the physical capacity necessary for delivery by natural forces and to shorten its course and time of body regeneration in the postpartum.

Nowadays we observe an increased number of caesarean sections, and a large pressure is exerted on women to deliver by the power of nature. Caesarean section is a kind of a surgery that often save life of a mother or a baby, when there is no progress of delivery, baby is in danger or when a mother is not healthy or strong enough to deliver by herself. A natural delivery sometimes takes hours and is very tiresome for the mother but is a better solution for her health, especially for the process of postpartum regeneration.

**Aim of the study:** The aim of the study was to estimate a scale of the prevalence of Caesarean section and natural delivery and to observe if the physical activity has any impact on the type of delivery.

**Materials and Methods:** A study took place in the city of Bydgoszcz, 60 women took part in the study, 30 of them were physically active during the whole pregnancy and 30 were not. Women were filling the original questionnaire in 24 and 30 week of pregnancy and also one month after delivery.

**Results:** in 24 weeks of pregnancy 80% of women planned a natural labor, 20% caesarean section -12 women- 4 of which were physically active in pregnancy, and 8 were inactive. There were no statistically significant difference between the two groups. In 30 weeks of pregnancy, 78.3% women planned a natural labor, 21.7% Caesarean section - 13 women- 2 of which were from the physically active group and 11 from the inactive group. It was a significantly statistically significant difference. Finally, 54.2% (33) of women gave birth in a natural way, and 45.8% (27) had a caesarean section. In the active group, 60% delivered by the power of nature and 40% by caesarean section. In the inactive group, 48.3% had a normal labor, and 51.7% CC. Yet, this was not a statistically significant difference between groups. The main causes of caesarean section were: the lack of delivery progress, incorrect placement of the child for delivery, too thin scar after previous cc and previous surgery.

**Conclusion:** Although regular physical activity has a great impact on the course of pregnancy and is said to be a factor that facilitates childbirth, the study showed no statistically significant difference between the two groups. The reason for that is probably too small study group - the analysis will continued in order to collect information from the bigger group.

**Title: The occurrence of back pain in physiotherapists**

**Authors: Piotr Ożóg, Dawid Natański**

**Session: Physioterapy & Ortopaedics & Sports Medicine**

**Introduction:** Spine pain is one of the most common problems of the movement system. The physiotherapist's long-term commitment to static body positioning and high-intensity motion, often also the height-weight divergence between the therapist and the patient, leads to the painful role of the patient.

**Aim of the study:** Determining whether physiotherapists suffer from back pain, what the nature of those ailments are, and the impact that they have on them. Determining whether the area of discomfort associated with regular sports or severe spinal injuries and the impact of sports on the intensity of pain.

**Material and methods:** There were 35 participants (21 women and 14 men), aged 25-63 (mean 38 years). The survey questionnaire (questions on age, sex, height, weight, length of service, occupational specificity, spine pain, VAS scale and modified Laitinen questionnaire) were used in the study group.

**Results:** Statistical analysis revealed the incidence of pain in the spine and their dependence on length of service, the area of the most frequently reported pain and their nature. The impact of physical activity and previous injuries to the spine on the episode in which the pain was present was not shown.

**Conclusions:** Occupational physiotherapist is associated with chronic low back pain dominance, which may be related to the standing position of the work most commonly found in the study group. There was no relationship between the regular exercise of sport and the intensity of the pain experienced, as well as the dependence of the painful spine and sport or previous spinal injuries.

**Title:** How ice swimming is affecting autonomic regulation of Heart Rate (HR)

**Authors: Szymon Gawrych, Dariusz Dziarkowski, Sebastian Szyper**

**Session:** Physioterapy & Ortopaedics & Sports Medicine

**Intorduction:** Ice swimming is a common winter-time sport usually practiced in a still or running bodies of water. This sport is health beneficial for its' performers as it boosts their immune system or provides autonomic nervous system training.

**Aim of the study:** The aim of this study was to research how entering cold water affect the heart rate (HR) as a part of Autonomic Nervous System (ANS) reaction at the very moment of immersion.

**Materials and methods:** 15 participants aged 20-25 (Mean age 23.7 years old, mean BMI: 22.8 ±1.45, number of females: 8, number of males: 7) immersed a cold water (1 degree Celsius) for 3 minutes. Each immersion was preceded by 20 minute warm-up including running, stretching and jumping. After the warm-up participants were provided with Holters' monitor and entered the cold water up to their true ribs. After full exposure and emerging from the water Holters' monitor was removed. In-water Holters' monitors' readings were than compared to the resting values of HR that were gathered during 24 hour monitor.

**Results:** The average HR value gathered from 24 hours Holters' monitoring was 67 ±7.9 (p=0.0000) beats per minute (BPM) and the average HR value during the immersion was 138.6 ±13.3 (p=0.0000) BPM . Lowest readings were 137.79 ±13.2 (p=0.0000) BPM and the highest recorded were 139.47 ±13.3 (p=0.0000) BPM.

**Conclusions:** This research may improve knowledge on autonomic nervous system (ANS) functioning and its' reactions in cold water bathing through the changes in the recorded HR values.

**Title:** The art of seeing the invisible - the use of modern devices in the diagnostics and treatment of women with telangiectasis

**Authors: Joanna Machowicz, Katarzyna Chmura, Dominika Janus**

**Session: Nursing & Public Health / Geriatric & Palliative Medicine**

**Introduction:** Chronic venous disease (CVD) is one of the most common pathologies of the venous system and many risk factors lie at its base. The early manifestation of this condition might be seen as telangiectasis or C1 change.

**Aim of the study:** The aim of this study was to evaluate the possibility of visualization of C1 changes according to CEAP scale and the feeding veins supplying them located in the lower limbs using eyesight, vascular transilluminator and VeinViewer device which uses near – infrared light.

**Material and methods:** 30 women aged from 20 to 40 years old were subjected to the study. 50 C1 changes were analyzed in total using the methods mentioned above. In these cases the feeding veins were not visible in clinical examination. The presence of feeding veins was evaluated with a consideration of vessels carrying the blood towards the telangiectasis and those coming from other sources (veins). Moreover, photographic documentation was taken.

**Results:** In venous changes subjected to the analysis, in nearly 30% of the cases we managed to visualize 1 feeding vein using vascular transilluminator and in over 30% using VeinViewer. In cases of more than 1 feeding vein present, using VeinViewer allowed for visualization in more than 50%, wheras transilluminator only in 4%. In 12% of the patients we were unable to visualize the range of feeding veins with any of the methods.

**Conclusions:** The implementation of new visualization technologies of the superficial venous system significantly improves the quality of assessment of changes connected with occurance of CVD and makes up a valuable supplementation of physical examination. It creates the possibilities of better imaging of studied vessels, resulting in more efficient treatment of telangiectasis.

**Title:** Self-assessment of the Musculoskeletal System Load of the Nurses Employed in Conservative and Surgical Departments

**Authors: Karolina Filipska**

**Session: Nursing & Public Health / Geriatric & Palliative Medicine**

**Introduction:** Work-related musculoskeletal disorders (WMSDs) all over the world are a frequent cause of illness affecting people working especially in the health sector. In the medical professions, nursing staff experiences negative impact of work on the motor system to the highest degree.

**Aim of the study:** The aim of the work is to assess the extent of disability of nursing staff exposed to excessive strain on the spine as measured by the Oswestry Disability Index.

**Material and methods:** The study involved 50 nurses employed in surgical (32%) and conservative (68%) departments. The study used the method of a diagnostic survey, and the Oswestry Disability Index questionnaire was the research tool. The collected material was subjected to statistical analysis.

**Results:** Women accounted for nearly 98% of the respondents. The average age of the respondents was over 46 years (46 years and 3 months). The results of the study showed that the occurrence of pain in the spine adversely affects the functional performance, in particular the social life (p=0.0004) and lifting (p=0.036). The average disability score at the Oswestry scale was 25.88%, which indicates a moderate disability of the respondents.

**Conclusions:** Pain in the spine significantly affects the functional capacity of the subjects. This problem is particularly common among nursing staff.

**Title:** The impact of guidelines in medical education on the quality of multiple choice questions.

**Authors: Katarzyna Piotrowska Piotr Przymuszała, Dawid Lipski,**

**Session: Nursing & Public Health / Geriatric & Palliative Medicine**

**Introduction:** Multiple choice questions (MCQs) are a frequent form of knowledge evaluation. They are viewed as time-efficient, easy to grade and as long as they are well-written, MCQs can be an objective and adequate mean of assessment. MCQs frequently have imperfections called item-writing flaws (IWFs), that may superficially appear harmless, but in fact can profoundly impact the way students understand and answer questions, and thus falsifying evaluation of their knowledge The occurrence of IWFs in the questions is attributed mostly to inadequate training and education of teachers. As a result actions aiming at improvement of the quality of MCQs should be implemented, such as training sessions dedicated to proper writing of questions or distribution of reference materials on the subject among the staff. Results of previous researches give grounds for notion that such initiatives have a potential to eliminate most of IWFs.

**Aim of the study:** Authors created a short document containing guidelines of good practices in MCQs creation. The aim of this study was to evaluate the quality of MCQs at the Poznan University of Medical Science (PUMS) prior and after academic teachers became acquainted with the document and evaluate its usefulness in improving the process of questions writing on the second level of Krickpatrick Model.

**Material and methods:** A search of the available literature was conducted in order to determine international guidelines on the subject of MCQs writing, which resulted in elaboration of a document with a set of good practices on it. The proper part of the study consisted of the evaluation of the MCQs written by ten academic teachers for number and type of IWFs prior (181) and after (148) getting acquainted with the document with guidelines on MCQs writing. The data were analysed with Statistica Software.

**Results:** In total 181 MCQs created by academic teachers prior receiving the document were analyzed and the number of IWFs was equal to 77. The median IWFs/MCQs was 0,4±0,38. In the next step 148 MCQs created after receiving the document were analyzed and the number of IWFs was 13. Median IWFs/MCQs was 0,0±0,15. The difference of the quality of questions prior and after introducing the document calculated in Wilcoxon's test was statistically significant at $p<0,05$. The quality of MCQs was significantly higher after the document was introduced.

**Conclusions:** The created tool influences the increase in the quality of MCQs. It is worth creating and using such tools in medical education.

**Title:** Assessment of the relationship between affective temperament dimensions, life attitudes, stress coping strategies, personal experience of violence and intolerance and attitudes towards groups most often affected by social exclusion

**Authors: Kosma Kołodziej, Katarzyna Urtnowska-Jopek, Karolina Suwała, Kosecka Katarzyna**

**Session: Nursing & Public Health / Geriatric & Palliative Medicine**

**Introduction:** Many scientists reflect on the predictor of our attitudes towards minority groups. Over what affects the level of our acceptance. An original study conducted in 2018/2019 gives the opportunity to explore human openness towards minority groups in relation to the affective temperament, life attitudes and styles of coping in stressful situations.

**Aim of the study:** Assessment of the relationship between affective temperament dimensions, life attitudes, stress coping strategies, personal experience of violence and intolerance and attitudes towards groups most often affected by social exclusion.

**Materials and methods**:Subjects: 300 respondents, 149 women and 151 men, aged 18-85 (mean 30.7 + 9.1 years). The age of men and women did not differ significantly.

TEMPS-A questionaire for the evaluation of five temperament dimensions, Questionaire life attitudes (KPŻ), questionnaire for Stress coping strategies (CISS) evaluation were used. For the assessment od sociodemographic data and aatitudes toward minority groups the own authorship questionnaire was applied. The variable distribution by Shapiro-Wilk test were checked. For comparison of the differences between two groups the U-Mann-Whitney test, and for comparison of differences of three or more groups the Kruskal Wallis ANOVA test were applied. Prediction analysis was done by multifactorial linear regression (MLR).

**Results:** 1) Dimensions of affective temperament: depressive, cyclothymic, irritable and anxious are associated with non-adaptive styles of coping with stress and unfavorable attitudes and less tolerance towards different groups and people excluded. 2) The experience of domestic violence and / or social exclusion is associated with a higher intensity of traits in depressive, cyclothymic, irritable and anxious dimensions and lower in hypertime, greater risk of developing non-adaptive emotional style and unfavorable life attitudes. The exclusion experience is associated with greater tolerance for excluded people and groups. 3) The predictive of the emotion-focused style in CISS is the anxiety, cyclothymic and irritable dimension, the predictor of existential emptiness in the KPŻ is the cyclothymic dimension, while in the anticipation of level of intolerance towards groups and people at risk of exclusion the irritability turned out to be the only important one.

**Conclusions:** Research on attitudes towards socially excluded groups in relation to the temperamental temperament, life attitudes and styles of coping with stress give new light to the change of human attitudes and the presented level of tolerance. The results can be useful for working with groups presenting negative attitudes towards minority groups. They also give you the opportunity to work with patients who have been discriminated against or who have been victims of violence at home in their childhood.

# Title: The study of quality of life by FACIT scale of elderly people with disturbed quality of sleep

**Authors: Paulina Kasperska, Eliza Oleksy, Anna Ziółkowska, Wojciech Stemplowski, Natalia Sokołowska, Remigiusz Sokołowski, Karolina Klimkiewicz-Wszelaki**

**Session:** Nursing & Public Health / Geriatric & Palliative Medicine

**Introducion:** People are more interested about research on quality of life since early forties XX century. The concept of quality of life have multilevel and multidimensional character. The concept of well-being describes the psychological, emotional, social, cognitive and physical aspects. Quality of life should be understood as a subjective well-being, and ability to function in different areas of life, including the assessment of resources and capabilities.

**Aim of the study**: The main aim of the study was to determine the level of quality of life by FACIT scale in people with good and bad quality of sleep examined by Epworth scale in aspects such as: physical condition, family and social life, emotional state, functioning in everyday life, fatigue, discomfort associated with illness, spirituality.

**Material and methods:** The study included 102 people hospitalized in Geriatric ward.

The research group was about 60-92 years old. The average age in research group was 77,28 years old. Women accounted n=72 people, men n=30 people.The Avarage age of women was n=77,8 years old, average age of men was n=77,29. To evaluate quality of life (in general) people with good and bad quality of sleep was FACIT scale, and Epworth scale.

Statistical analysis was carried out on the basis of the Shapiro-Wilk test, U Mann-Whitney test, ANOVA test. For the level of statistical significance was set $p \leq 0.05$.

**Results:** People with good sleep quality had more sleepy hours during the night than people with poor sleep quality. there is a relationship between physical efficiency and good sleep quality. Eldery people functions better in everyday life with good quality of sleep. People showing a higher index of spirituality (inner peace) have better sleep quality. There is a significant relationship between emotional well-being and good sleep quality. There is a significant relationship between quality of life and good quality of sleep.

**Conclusions:** Good sleep quality has a significant impact on the functioning of the areas, i.e. the number of sleepless hours (total), physical performance, functioning in everyday life, spiritual well-being, emotional well-being, quality of life.

There is a need to conduct in-depth studies on the quality of life of elderly people with sleep disorders in the Polish population, because after conducting a systematic review of scientific work, research on similar subjects has not been resolved.

**Title:** Frail as a new way a look at geriatrics patient.

**Authors: Radosław Perkowski, Joanna Androsiuk-Perkowska, Marcin Kożuchowski, Agnieszka Kudanowska, Marta Muszalik**

**Session:** Nursing & Public Health / Geriatric & Palliative Medicine

**Introduction:** Frailty syndrome is a state of increasing weakness and loss of physical fitness, which occurs in the elderly, leads to a progressive declines in activities of daily living, disability, increased risk of falls and hospitalization as well as institutionalization and even death. The most popular tool for screening of frailty are criteria Lindy Fried such as: unintentional weight loss, exhaustion, muscle weakness, slowness while walking, and low levels of activity.

**Aim of the study:** The screening test of frailty syndrome and coexistence of other diseases, the amount of medicines taken. Second aim were functional assessment, assess of independence in instrumental activities of daily living and body composition.

**Material and methods:** 94 seniors were tested using the L. Fried criteria. A questionnaire was also carried out, regarding socio-demographic factors as well as co-morbidities and the number of medicines taken and IADL assessment. Functional assessment : Timed Up and Go test, The Short Physical Performance Battery. The body composition analysis (Tanita) was performed and the hand grip strength was measured.

**Results:** The incidence of frailty syndrome in the study population was 26 people (28%), pre-frail (34%) 32 people, and non-frail 36 people (38%). Patients with frailty syndrome were older, had an increased number of medication and diseases. Frail patients compared to the pre-frail and non-frail groups were characterized by the following features: statistically significant ($p<0,05$) lower body weight, lower weight of lean tissue and muscle mass, including skeletal muscle. People with frailty also had more limitations to independence in instrumental activities of daily living. Physiotherapeutic assessment have shown that patients with frail have slower walking speed, lower strength and endurance of lower limbs and an increased risk of falls and poorer functionality.

**Conclusions**: As the research results show, the incidence of frailty syndrome may reach 28%, which makes it a significant epidemiological problem. People with frailty have reduced independence in instrumental daily activities. The occurrence of the weakness syndrome increases with age. People affected by frail are also more ill and take more medicines.

**Title**: Impact of transcranial magnetic stimulation over motor cortex on depression and quality of life in patients with neuropathic pain

**Authors: Dmitrijs Glazunovs, Jānis Mednieks**

Session: Neurology & Psychiatry & Neurosurgery/ Intensive Care & Emergency Medicine,

**Introduction:** Neuropathic pain (NP) affects approximately 10 % of the general population. Neuropathic pain is often chronic; chronic pain is one of the factors for determining depression. In most patients the pain is persistent or drug resistant. Studies show that pain affects most domains of quality of life (QOL). Drug resistant neuropathic pain can be relieved by repetitive transcranial magnetic stimulation (rTMS) over primary motor cortex (M1). The secondary outcome might include reduction in depression and improvement in QOL.

**Aim of the study:** To evaluate the impact of rTMS over M1 on depression and QOL in patients with NP.

**Materials and methods:** An ongoing prospective case series study carried out at Clinic "DiaMed" in 2018/2019 academic year in Riga, Latvia. Four patients (n = 4) with NP before and after rTMS course were evaluated using depression test Patient Health Questionnaire (PHQ-9) and QOL questionnaire 36-Item Short Form Survey (SF-36). Minimum rTMS course: 10 consecutive weekday rTMS sessions.

**Results:** Total number of rTMS sessions done: 55.

1st patient. 15 stimulation sessions; PHQ-9 reduction rate: ~ 22 %.

2nd patient. 10 stimulation sessions; PHQ-9 reduction rate: ~ 75 %.

3rd patient. 10 stimulation sessions; PHQ-9 increased by 50 %; QOL has reduced. Diagnosis: right side trigeminal nerve maxillary branch compression neuropathy with trigeminal neuralgia.

4th patient. 20 stimulation sessions; PHQ-9 reduction rate: 100 %.

The QOL of 1st, 2nd and 3rd patient have improved.

**Conclusions:** It is possible to reduce the level of depression as well as improve QOL (as a secondary outcome) using rTMS over M1 in majority of patients with NP.

**Title:** Analysis of the concentration of vitamin B12 and folic acid in patients with mild disorders of neurocognitive functions after the age of 60

**Authors: Eliza Oleksy, Remigiusz Sokołowski, Paulina Kasperska, Anna Ziółkowska, Wojciech Stemplowski, Karolina Klimkiewicz-Wszelaki**

**Session:** Neurology & Psychiatry & Neurosurgery/ Intensive Care & Emergency Medicine,

**Introduction:** Vitamin B12 and folic acid play a fundamental role in the functioning of the central nervous system (CNS) and in the conversion of homocysteine to methionine, mediated by methionine-synthase, necessary for nucleotide synthesis and genomic and non-genomic methylation. Folic acid and vitamin B12 may play a role in preventing disorders of the CNS, mood disorders, dementia and neurocognitive disorders (NCD) in the elderly.

**Aim of the study:** Comparing the levels of vitamin B12 and folic acid in serum of patients with mild NCD after 60 years old.

**Materials and methods**: The study was conducted at The Clinic and Department of Geriatrics, Ludwik Rydygier Collegium Medicum In Bydgoszcz, Nicolaus Copernicus University. The duration of the study: September 2015 – February 2018. The study involved 130 participants, including 31 people assigned to the group without NCD and 99 to the group with mild NCD. Recruitment for both groups took place on the basis of specific inclusion and exclusion criteria. The first inclusion criterion for both groups of patients was admission to the Geriatrics Clinic for the Overall Geriatric Assessment. The next requirement was the age of those who were 60 or older. Exclusion criteria from the study were the following factors: active mental illness, diagnosed deep NCD according to DSM-5 (Diagnostic and Statistical Manual of Mental Disorders Fifth Edition), use of drugs that slow down the central nervous system; total blindness or uncorrected vision defects, complete deafness or uncorrected hearing impairments, significant reliance in everyday life and less than 6 years of formal education. The level of significance was $p<0.05$.

**Results:** The mean ages were 74.64 years old for non NCD and 78.34 years old for mild NCD ($p=0.027$). Mean level of vitamin B12 was 314,29 pg/ml for non-NCD group and for mild NCD was 264,27pg/ml ($p=0.025$). Mean level of folic acid was 7,32 ng/ml for non-NCD group and for mild NCD was 6,79 ng/ml ($p=0.4141$). The correlation of the vitamin B12 level to the folic acid level is 0.36 ($p <0.001$).

**Conclusion:** Vitamin B12 levels In the patients' serum suffering from mild NCD is significantly lower than in patients' serum without NCD despite normal ranges of reference. Folic acid level has been examined and proven to be similar in patients with mild neurocognitive disorders and in people without this disorder, so in this case the presence or absence of the disorder does not have a proven effect on the levels of this vitamin. There is also correlation between level of vitamin B12 and level of folic acid. It is suggested to conduct more numerous research in order to verify the reference values of vitamin B12 in this age group. Lower values of this vitamin within the normal reference range may indicate the beginning of mild NCD. The implementation of vitamin B12 supplementation in older people seems to be correct because it may delay the occurrence of neurocognitive function disorders.

**Title:** FER-based emotional intelligence of psychiatric patients

**Authors: Joanna Bisaga, Tomasz Cyganek, Aleksandra Bąk, Maciej Drwęcki**

**Session:** Neurology & Psychiatry & Neurosurgery/ Intensive Care & Emergency Medicine,

**Introduction:** Facial emotion perception (FER) plays important role in mental health and social communication. The ability to recognize mimic expression is considered to be one of main components of emotional intelligence. Assessment of emotional recognition can be useful tool for diagnostic and therapeutic procedures.

**Aim of the study:** The aim of our study was to measure the emotional intelligence of patients, based on the ability to recognize emotion by a mimic expression. We wanted to assess the differences in FER between psychiatric patients and normal population. We also compared the perception of basic emotions in different mental disorders.

**Material and methods:** Our study group consisted of 47 patients from Psychiatric Ward, hospital in Katowice-Ochojec. We included all patients hospitalized 22.03-24.11.2018 in Psychiatric Department (open and locked units) who gave informed consent. We used Emotional Intelligence Scale-Faces (SIE-T) test, which consists of 18 face photos expressing different emotions. Overall score was counted by a competent psychologist. We examined psychiatric patients and compared their results with normal healthy population.

**Results:** The results of study show lower emotional intelligence of psychiatric patients in comparison to normal population. The results from SIE-T tests comparison of both groups had significant statistical difference. There was no significant difference in FER in sex, level of education, professional activity, diagnosis comparison.

**Conclusions:** Patients from psychiatric ward have lower emotional intelligence compared to healthy population. The abnormalities of FER could be used during examination to detect higher risk of mental disorders or as a screening test to detect disease on early stage. However, the thorough studies should be carried out.

**Title:** Assessment of training needs of employees of emergency services in developing countries on Ghana's example

**Authors: Katarzyna Sas, Adriana Wielgus, Jakub Dreliszak, Ewa Zieliński**

**Session:** Neurology & Psychiatry & Neurosurgery/ Intensive Care & Emergency Medicine,

**Introduction:** Accidents and life-threatening situations are becoming an increasing problem for developing countries of West Africa. The number of vehicles in these countries shows an upward trend, as well as accident rates and their victims number. Ghana is one of the countries entering the second phase of epidemiological transformation. Mortality rates in this area show that 63% of victims die. Up to 81% of deaths occur at the scene of accident or during transport. High mortality rates indicate the need to develop quality of pre-hospital care. Lack of well-trained professional staff is one of the biggest problems of emergency medical care in developing countries.

**Aim of the study:** The purpose of study was assessment of training needs of employees of emergency services in developing countries on Ghana's example

Mateirals and methods: Among of the respondents were 67 people with random gender, age, level of education, place of work and residence who have agreed to take part in the study. The study was carrying out using author's knowledge test before and after Paramedics for Africa training.

**Results:** The average test result was only 46,1%. The average of test results for anatomy domain was 53, 7%, for security, asepsis and antiseptic and psychology of rescue operations was 49,2%, for etiology of life-threatening diseases was 65,2%, for diagnosis of life-threatening diseases 40,9% and for life-saving procedures was only 38,6%. It has been proven that age, level of education, place of work and place of residence affect the level of knowledge of Emergency Services employees in Ghana. Paramedics for Africa training results in an increase in the level of knowledge among participants by 32,4% on average.

**Conclusions:** The developing countries of West Africa face numerous problems, including the lack of qualified medical Staff. The level of knowledge about Emergency Medical Care among of employees of Emergency Services in Ghana is significantly low. There is a need to train Emergency Services employees about Emergency Medical Care basics. The lowest test results has been observed among of ambulance service employees and among of people with primary education and without education wherefore this groups are recommended as the main target group of the Emergency Medical Care basic trainings in future.

**Title:** Women's attitude towards natural childbirth

**Authors: Agata Kempka**

**Session:** Gynaecology & Obstetrics/ Endocrinology & Diabetes / Internal Medicine

**Introduction**: Natural birth is the safest type of delivery, both for a mother and a child, and therefore should be popularized by medical community among pregnant women. The number of Caesarian sections in Poland is increasing and it has exceeded fourfold the number recommended by WHO, which is 10%. That is why it is so important to get to know the women's opinion on natural childbirth.

**Aim of the study:** The aim of this work was to familiarize with the women's attitude towards natural childbirth and with the impact of various factors on this attitude.

**Material and methods:** Data were collected from questionnaires distributed online. 1396 women were questioned through author's anonymous questionnaire which consisted of 28 questions.

**Results:** The results revealed that the important factor that has a strong impact on women's attitude towards natural childbirth is their attitude to labor pain – women that declared low fear of labor pain were more eager to have a natural childbirth, than women with high fear of labor pain. Also, the use of analgesia during the labor was the important factor – women who used analgesia during the labor, especially epidural analgesia, were more eager to have a natural childbirth. Women were asked about their main source of information about labor and person who declared that the doctor was the main source of information, had a more positive attitude towards natural childbirth, comparing person whose main source of information was Internet. Also, the positive attitude toward natural childbirth had women who were assisted by the partner during the labor. Another important factor is sexual activity after labor – women who had sexual activity till 3 months after labor were more eager to have natural childbirth, comparing to women who had sexual activity after more than 4 months since labor.

**Conclusions:** Women's attitude towards natural childbirth is multifactorial. To popularize the natural childbirth, the most important is education among pregnant women about usual procedures around the birth and the available labor analgesia. The partners of pregnant women should have an opportunity to participate in the labor. Also, the education about sexuality after birth has its importance.

**Title:** Is the severity of diabetic ketoacidosis an appropriate predictor of the duration of hospitalization?

**Authors: Jakub Rzeszuto, Paulina Adamska, Maciej Ledziński, Kamila Skibińska, Szymon Suwała, Roman Junik**

**Session:** Gynaecology & Obstetrics/ Endocrinology & Diabetes / Internal Medicine

**Introduction:** Diabetic ketoacidosis (DKA) is an acute complication of diabetes mellitus. Among diabetics, the prevalence of DKA is 46-80 people per 10,000 person-years, and the mortality rate ranges from 4 to 10%. The severity of DKA is evaluated by many factors, including gasometry and state of consciousness. Research in this field is highly needed, especially since every subsequent hospitalization due to DKA reduces the life expectancy.

**Aim of the study:** The aim of this study was to assess the factors affecting the duration of hospitalization of DKA, and its onset, with particular emphasis on the usefulness of evaluation of DKA severity.

**Materials and methods:** The study was carried out in a retrospective form. The study group consisted of patients from our Clinic, hospitalized for DKA. Medical documentation was analyzed in terms of such factors as the date of occurrence of DKA, results of laboratory tests, chronic diseases etc. The obtained information was subjected to statistical analysis using the STATISTICA 13.0 and Microsoft Office Excel. The documentation of 107 cases was analyzed.

**Results:** Median time of hospitalization of a patient with DKA was 7.50 days - there was a difference in the duration of hospitalization depending on patients' awareness. There was a significant correlation between the time of hospitalization and glycemia at admission to the hospital (R=0.29; p=0.003). There was no connection between the severity of DKA and the duration of hospitalization. The type of diabetes was a statistically significant factor for the recurrence of DKA (p=0.049, more often in type 1 diabetes).

**Conclusions:** The results indicate that the duration of hospitalization of patients with DKA depends to the greatest extent on the state of consciousness and blood glucose level of the patient at the time of admission to the ward. Surprisingly, there was no connection with the severity of DKA, however further observation in this topic is necessary. There is a need to improve patients education about proper therapy and DKA, especially patients with type 1 diabetes mellitus.

**Title:** Prospective validation of the predictive value of BOAH questionnaire in prioritisating polysomnography in patients with OSAS suspicion

**Authors: Julia Niemiec, Iga Bałut, Jędrzej Chrzanowski, Agnieszka Pogorzelska**

**Session:** Gynaecology & Obstetrics/ Endocrinology & Diabetes / Internal Medicine

**Introduction**: Gold standards for Obstructive Sleep Apnea Syndrome (OSAS) diagnosis require assessment of Apnea-Hypopnea Index using polysomnography. Prior to this test, patients should be assessed and the priority of the admission to the PSG should be provided. The adequate questionnaires were developed for the patient assessment, STOP-BANG Questionnaire (SBQ) being the most popular and approved for clinical use. BOAH questionnaire is a faster and shorter alternative method to SBQ, based on a smaller number of factors, derived from SBQ: BMI, Observed Apneas, Age and Hypertension. The priority was then confirmed using AHI score, the groups determined using cut-off of AHI≥30 for severe and AHI≤15 or AHIside≤5 for mild OSAS.

**Aim of study:** The aim of this study is to compare the SBQ and BOAH questionnaires and to determine their predictive value.

**Material and methods:** Clinical and polysomnographic data, as well as responses in both questionnaires were collected from 956 patients. Patients with the missing data in PSG examination or questionnaires data were excluded from the analysis. To determine viability of the questionnaires scores, logistic regression was performed. Then, comparison between scores obtained by the regression and calculated using methods provided with the questionnaires was performed, and regression fit for both questionnaires (BOAH and SBQ) were calculated

To compare the predictive value between questionnaires, Receiver Operating Characteristics (ROC) curves were developed, Area Under Curve (AUC), sensitivity and specificity scores and Youden indexes were calculated for each curve. ROCs curves were compared using Hanley's algorithm.

**Results:** From 956 patients, only 562 with full records were considered in the analysis.

Logistic regression fit values were accordingly, for SBQ: 70.40% and for BOAH 73.63%. BOAH questionnaire yielded higher Area Under Curve (AUC) 0.6471, compared to 0.6252, however the difference between AUCs was not significant (p=0.4656).

Sensitivity, specificity and positive predictive values were calculated for both questionnaires, and were accordingly, for BOAH: 0.50, 0.78, 0.909 and for SBQ: 0.72, 0.49, 0.865.

**Conclusions:** The predictive value of BOAH questionnaire is comparable with this of STOP-BANG Questionnaire. Due to the smaller number of factors needed to be measured, as well as higher specificity and high positive predictive value, we recommend use of BOAH questionnaire as a method for assessment of patients' priority for polysomnography examination.

**Title:** Hormonal pills - contraception or something more?

**Authors: Paulina Sierdzka, Aleksandra Matonóg, Joanna Pilarska, Aleksandra Hauzer**

**Session:** Gynaecology & Obstetrics/ Endocrinology & Diabetes / Internal Medicine

**Introduction:** Using antiandrogenic contraception is one of the methods of birth control. It also has a significant, non-contraceptive impact on women's body. Those drugs can be used in various disease entities, especially in those with elevated level of androgens, because of its ability to reduce the level of male hormones.

**Aim of the study:** The aim of our study is to establish correlation between taking different types of antiandrogenic drugs and intensity of hirsute in specific areas, acne and menstrual pain intensity in women's body.

**Material and methods:** 570 women in childbearing age that had been using oral contraception for at least three months took part in our research. We examined women and asked them about quality of life, health, direct causes and effects of that treatment, intensity of acne and menstrual pain before and after. Our research group has been divided into 4 groups depending on the type of gestagen: dienogest, cyproterone, chlormadynone and drospirenone. Additionaly, the control group consist of women taking oral contraceptives without antiandrogenic component. 225 of 570 women complained of hirsutism. In order to rate its intensity we used the Ferriman and Gallawey scale before and after 3 months of the treatment.

**Results:** Examined women are in the 18-42 (23 ± 3,23) age bracket, most of them in informal relationship, coming from big cities. According to our study, all groups of drugs effectively reduced pain and acne severity. Moreover, cyproterone and drospirenone turned out as the most effective drugs in hirsutism. Cyproteron has the strongest impact on chin, thighs and buttock. Drospirenone reduces hair mostly in buttock and thighs areas. In some specific areas, like abdomen and thighs, chlormadynone was the most effective. Suprisingly, according to our research, dienogest does not have any impact on body hairness.

**Conclusions:** Oral contraceptive pills have much more benefits and therapeutic uses besides the contraceptive effect. The choice of a particular group of antiandrogen drugs is important for reducing hair in specific parts of the body. That is why we should pay more attention while choosing the type of contraceptives, especially in women with hyperandrogenic diseases and its symptoms.

**Title:** Quality of sleep in patients suffering from diabetes

**Authors: Piotr Nadarzyński, Tomasz Arentewicz, Jagoda Ziemiańska, Aleksandra Drzewiecka, Szymon Suwała, prof. Roman Junik**

**Session:** Gynaecology & Obstetrics/ Endocrinology & Diabetes / Internal Medicine

**Introduction:** Sleep is essential component in life of every human. Poor quality of sleep leads to series of consequences, which is felt not only right after waking up, but mostly during the day. In case of considerable depravity it can lead to falling asleep while doing everyday activities. The number of people with sleeping disorders is growing - current observations indicate that patients suffering from endocrinological diseases (especially diabetes) often complain for worsened sleep quality.

**Aim of the study:** The aim of the study is to assess the frequency of sleep disorders in patients with diabetes and to determine their specificity.

**Material and methods:** Research in progress. In the study we used a questionnaire method (according to the Google Spreadsheet mechanism) with the use of an original survey containing 23 questions (6 metrical and 17 about quality of sleep and somnolence based on standarized questionnaires: Epworth Sleepiness Scale and Pittsburgh Sleep Quality Index). The obtained data was subjected to statistical analysis using the STATISTICA 13.0 and Microsoft Office Excel 2013.

**Results:** Research in progress - so far 468 respondents took part in the study. The average time needed to fall asleep for respondents with diabetes was 44 minutes. The average sleep time was 6 hours 19 minutes. In Epworth Sleepiness Scale the respondents scored 8 points, which is within the normal range. Only 5% of respondents rate their sleep quality as very good and 45% rate it as bad. The full results will be presented during the Conference.

**Conclusions:** Current results suggest that patients with diabetes often suffer from sleeping disorders and quality of their night rest is not adequate to their personal needs. Further observations are required. All conclusions will be presented during the Conference.

# Poster Block

**Jury:**

Barbara Ruszkowska-Ciastek, PhD

Jadwiga Sarwińska, PhD

Małgorzata Chudzińska, PhD

**Moderator:**

Aleksandra Modlińska

**Title:** Role of Rho in healthy and cancerous cells

**Authors:** Martina Karwowska, Agnieszka Żuryń, Aleksandra Opacka, Klaudia Mikołajczyk, Wioletta Zielińska, Adrian Krajewski, Alina Grzanka

**Session:** Poster

**Introduction:** Rho GTPases were discovered over 30 years ago and are key regulators of a wide range of biological activities, including cytoskeletal dynamics, cell cycle progression, gene expression, apoptosis, migration and cell transformation. The Rho protein family consists of 20 members, divided into two groups: typical and atypical. This paper focuses on the role of selected Rho: RhoA, Rac1 and CDC42 proteins in the aspect of tumor progression.

**Aim of the study:** The aim of this work is to discuss current knowledge about the role of Rho proteins in cancer cells.

**Materials and methods:** The source of information was selected articles from the online database https://www.ncbi.nlm.nih.gov/pubmed/

**Results:** Rho proteins belong to the superfamily of small G proteins. They involved in the regulation of many processes crucial to the cell life, ie: regulation of the cell cycle and proper functioning of the cytoskeleton. Based on kinetic properties,,Rho GTPases can be classified as typical and atypical. Typical representatives of the Rho family, including Cdc42, RhoA and Rac1, operate on the principle of a switching mechanism, through a classic cycle between the active form associated with GTP and the inactive one - related to GDP. This cycle is regulated by signaling from RhoGDI, RhoGEF and RhoGAP. In contrast, atypical RhTP GTPases have amino acid substitutions in their Rho domains that change cyclic GTP / GDP. Abnormalities in the function of Rho GTPases may disturb cellular metabolism, which often leads to the development of cancer. They are manifested, among others, reorganization of actin cytoskeleton, increase in cell migration and frequent metastasis. The accumulation of mutations in Rho coding genes affects cell proliferation and survival, and consequently is responsible for the formation of the primary tumor. The changed Rac1 genes have been found in cancer cells including melanomas and breast tumors. However, the RhoA protein may be mutated in some tumors, including gastric cancer and angioimmunoblastic T-cell lymphoma. The role of Cdc42 in tumor progression may be dependent on the type of tissue. It was found that Cdc42 is overexpression in many types of cancer, including non-small cell lung cancer, melanoma, breast cancer. In most cases of tumors, elevated levels of GTPases was found, which may be associated with increased expression of GAP, GEF and / or GDI.

**Conclusions:** Rho GTPase family proteins play a fundamental role in gene expression, cell proliferation and apoptosis. Both typical and atypical Rho GTPases may lead to cancer progression. In several human neoplasms RhoA or Rac1 are mutated, but in most tumors, the expression levels and/or activity of Rho GTPase members are variable. The control of cell signaling with the participation of Rho GTPase may thus be therapeutically directed to cancer treatment.

**Title:** A review of studies assessing the influence of dietary factors on the level of lncRNA expression, which epigenetic mechanisms can potentially participate in the course of ovarian cancer

**Authors:** Dorota Gumiela

**Session:** Poster

**Introduction:** Literature data indicate obesity as a risk factor for developing ovarian cancer. Research suggests that increased expression of long noncoding RNAs (lncRNA) is a factor that can affect tumour size, and the level of their expression may depend on the increased fat intake, which can lead to obesity.

**Aim of the study:** Assessment of the impact of nutritional intervention on the level of lncRNA expression.

**Material and methods:** The PubMed and ScienceDirect bases were searched from December 31, 2018 to January 23, 2019 in order to find works that concern the effect of nutrition on the level of lncRNA expression. The following keywords were used: lncRNA + high fat diet (720 publications), lncRNA + obesity (142 publications), lncRNA + dietary (480 publications). 1342 works were found. No studies with the participation of people were found. The study excluded the works in which information was not provided on how to divide groups of test animals, prepare feed or measure the expression of lncRNA after the introduction of a specific diet. The review included 4 animal studies, in which a nutritional intervention was used and its impact on the level of lncRNA expression was assessed, and information about the duration of the study and the level of expression of the studied lncRNA were included.

**Results:** Research shows that the use of high fat food (25% of fat) may contribute to a statistically significant increase or decrease in the level of the lncRNA expression in animal tissues in relation to the low fat content (5%).

**Conclusions:** Studies indicate that higher fat content in food intake may affect the level of lncRNA expression lacking the protein coding potential.

**Title:** Mindfulness as a technique of prevention and therapy in mood and anxiety disorders

**Authors**: Tomasz Skibicki, Iga Rupniak, Katarzyna Skibicki

**Session:** Poster

**Introduction:** Mindfulness practice involves the process of developing the skill of bringing one's attention to whatever is happening in the present moment. According Williams et al mindfulness is the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to things as they are. Mindfulness techniques have been known for thousands of years in the religions and philosophies of the East, taking a concrete form in Zen as Zazen meditation. In the modern Western context, the therapeutic potential was noticed by Jon Kabat-Zinn, who in the 1970s developed mindfulness-based stress reduction (MBSR). Gaining recognition MBSR has found its place in psychotherapy and is used in clinics around the world to work with patients with various mental disorders and somatic diseases.

**Aim of the study:** Presentation of current state of knowledge.

**Materials and methods:** Selective review of the literature.

**Results:** A lot of research showed greater activation of rostral anterior cingulate cortex (ACC) and dorsal medial prefrontal cortex (MPFC) and decreasing the activity of the amygdala during mindfulness meditation what is related to reduction of stress, mental ruminations, anxiety and sad mood. Long-term research studies have consistently shown a positive relationship between practice of mindfulness and psychological health. Mindfulness-based interventions significantly reduce ruminations and worry.

**Conclusions:** Mindfulness-based interventions seems to be a promising technique in the therapy of mood disorders and anxiety disorders and seems to improve the comfort of patients with chronic diseases and chronic pain. The extraordinary affordability of mindfulness techniques and their ease of use make them even more attractive.

**Title**: Sleep disorders as a problem of patients with Multiple Sclerosis - literature review

**Authors:** Martyna Lamtych, Klaudia Kwiatkowska, Karolina Kubiak, Bartłomiej Wrzesiński

**Session:** Poster

**Introduction**: Multiple Sclerosis (MS) is a chronic, demyelinating disease of the nervous system. Symptoms of this disease affects many areas of the patient's life. Among the non-motor symptoms, sleep disorders are mentioned. This problem affects over 60% of all the patients with MS. The most frequently mentioned in literature sleep disorders in MS patients are: insomnia, nocturnal movement disorders, sleep-related breathing disorders and narcolepsy. Unfortunately, the pathophysiology of the above symptoms has not been fully understood.

**Aim of the study**: The aim of this study was to review the literature on sleep disorders in patients with multiple sclerosis.

**Material and methods:** Databases such as PubMed and Cochrane Library were searched. Articles dealing with the occurrence, diagnosis and treatment of sleep disorders in multiple sclerosis were selected. The articles in English and Polish were used.

**Results**: The paper presents questionnaires and scales that are used to assess sleep disorders. Pittsburgh Sleep Quality Index (PSQI) and Epworth Sleepiness Scale (ESS) were the most commonly used to assess the mentioned disorders. Studies shows that over half of MS patients suffers from sleep disorders. In the diagnosis of breathing disorders during sleep, the method of polisonography is used to evaluate brain activity during sleep. In relation with the fact that sleep disorders often occurs as the effect of other disorders, the treatment is based on the elimination of the underlying symptoms. Hypnotic medications may also help. Positive influence is also brought by non-pharmacological treatment, which includes the so-called "sleep hygiene". These are general recommendations that are able to improve the quality of sleep. To obtain positive therapeutic effects, it is important to combine non-pharmacological with pharmacological methods.

**Conclusions**: Sleep disturbances can affect the quality of life in MS patients. The diagnosis and treatment of the above disorders is important from the point of view of comprehensive therapy. The pathogenesis of these disorders are not fully understood, which prompts to conduct further research in the field of the discussed problem.

**Title**: Intermittent fasting – controversy and influence on health

**Authors:** Aleksandra Salamądra, Michał Denkiewicz, Szymon Obuszewski, Marta Żebrowska

**Session:** Poster

**Introduction**: Fasting has been known for centuries, most often associated with religious rites or cultural conditions, but for several years we can see the increase in the popularity of fasting . Animal studies have shown that periodic calorie constraints can favorably affect life extension by slowing down degenerative and inflammation processes that play a role in cardiovascular disease, diabetes, cancer or neurodegenerative diseases. There are several diet models. The simplest is 16/8 where 8h is a „nutritional window''. According to the basic assumptions of this diet, there are no restrictions on the choice of food and the amount consumed, and thus no obligation to count calories or the content of macroelements. Despite the lack of specific guidelines on the quality of meals, they should be reasonably balanced according to the recommendations of healthy nutrition.

**Aim of the study**: Gathering information about benefits of intermittent fasting, not only in the context of weight loss.

**Materials and methods**: Review of the latest literature

**Results**: Intermittent fasting can be substitute for a restrictive diet. Intermittent fasting allows to quickly reduce weight but without losing muscle mass, which is often seen in the case of calorie restriction (increases growth hormone). It is possible to regain balance and re-sensitize the body to insulin and leptin. These two hormones play a key role in metabolic processes Studies have shown that intermittent fasting in mice led to a reduction in overeating, and also limited the development of prostate cancer in males. In Alzheimer's and Parkinson's disease, the ketogenic diet brings many benefits. However, the diet used is not organoleptically friendly and can be oppressive in already exhausted patients. Intermittent fasting allows the formation of ketones in the body and they help to protect memory, the ability to learn and slow down the disease changes in the brain. What's more, the fasting stimulates stem cells in the brain, which the brain can transform into neurons.

**Conclusions**: This idea in its assumptions rejects the importance of aspects such as the necessity of eating breakfast, high frequency of eating, the necessity of eating meals at constant times. Intermittent post offers many benefits that even affect gene expression. This diet shows benefits in cancer, cardiovascular, neurodegenerative diseases, obesity, asthma, inflammation of the intestines and reflux. The mainly side effect of this diet is the feeling of hunger. Of course, not everyone can use such a diet.

**Title**: Human rabies epidemiology in Ukraine, Poland, and worldwide: a longitudinal study

**Authors**: Daniel Wiśniewski, Izabela Uzar

**Session:** Poster

**Introduction**: Worldwide 59,000 people die on rabies per year. Most of them come from Asia (59,9%) and Africa (36,2%). The only continents that are entirely disease-free seem to be Antarctica and Australia (despite 3 Queensland bat-to-human transmission incidents).

**Aim**: The review paper gives the answers to the fellowing questions: What are the rabies mortality rate, rabies social and economic losses, the preventive medicine mechanisms worldwide, and the specifics of rabies situation in Ukraine and Poland representing East-Central Europe?

**Materials and methods**: The critial literature review method is used for analyzing, inter alia, the previously unpublished Ministry of Health of Ukraine research paper (delivered due to the Author's ask). Regardless on it the highest IF worldwide academic papers are analyzed, too. The following publication selection criteria have been used: indexing in PubMed, keyword "rabies epidemiology" (and with its translation into Polish), coverage (IF), release date not earlier than 2003, comprehensive approach to the topic. The only exception has been made for the reconstruction of historical or local epidemiological situation. The total number of the publications have been taken into account is 32.

**Results**: A strong statistic correlation is oberved between the country's Human Development Index position, the number of vaccines in domestic dogs and the number of human rabies incidents.

There is a strong statistic relationship between GDP and the structure of rabies-dependent losses. In the low income-countries most costs are accumulated by the production sector with moderate expenses on the medical sector and only minimal on the veterinary.

**Conclusions**: Ukraine is the second rabies-burden country in Europe. Avaragely, a few Ukrainian people die on rabies per year. A specific feature of the Ukrainian human rabies is its occurence in big cities (including Kiev), that is a phenomenon in contrast not only to the rest of Europe but to the so-called Third World countries, too.

In Poland where the last human rabies incident got registered in 2002 the number of post-exposure vaccinations against rabies has remained relatively constant and hasn't exceeded 9,000 per year. Małopolskie and Mazowieckie voivodships are at the forefront. The number of pre-exposure vaccinations has been lower by an avarage of 3,000 and under-represenTeded by the cohort of children and adolescents up to 19.

The so-called Third World countries have the highest mortality rates. The rabies-dependent losses affect the production sector with only minimal effect on the medical.

**Title**: Small-molecule PERK inhibitory compound as a therapeutic strategy in colon cancer

**Authors:** Adam Wawrzynkiewicz, Wioletta Rozpędek, Natalia Siwecka, Dariusz Pytel, J. Alan Diehl, Adam Dziki, Łukasz Dziki, Ireneusz Majsterek

**Session:** Poster

**Introduction**: In cancer cells hypoxia may evoke Endoplasmic Reticulum (ER) stress conditions and subsequently activate the Protein kinase RNA-like ER kinase (PERK)-dependent Unfolded Protein Response (UPR) signaling pathway. Its main effector, Eukaryotic Initiation Factor 2 alpha (eIF2α), plays a pivotal role in maintenance of cellular homeostasis, however under prolonged ER stress conditions the pro-adaptive branch of the UPR signaling pathway may switch into the pro-apoptotic resulting in apoptosis of cancer cells.

**Aim of the study**: The aim of the study was to evaluate the biological activity and cytotoxicity of the selected PERK inhibitory compound.

**Material and methods**: We examined the biological activity of the PERK inhibitor on HT-29 colon cancer cell line by measurement of the level of the phosphorylated form of the eIF2α, as the main substrate of PERK, using the Western blot technique. HT-29 cells were treated with PERK inhibitor at a concentration range of 6 μM to 50 μM for 1h and subsequently treated with thapsigargin (Th), an ER stress inducer, in final concentration of 500 nM for 2 h. Negative control constituted untreated cells, whereas a positive control cells treated with Th (500 nM).

We also evaluated the cytotoxicity of the inhibitor on HT-29 and CCD 841 CoN (normal colon cells) cell lines using a resazurin-based assay kit. Cells were treated with the investigated PERK inhibitor at a concentration range of 0,75 μM - 100 μM and subsequently incubated for 16, 24 and 48 h. Positive control constituted untreated cells, whereas a resazurin-medium solution served as a negative control. After removal of the wells content the resazurin solution was added to each well before 3 h incubation. Then the absorbance was measured at a wavelength of 600 nm and at a reference wavelength of 690 nm using the Synergy HT (BioTek) spectrophotometer.

**Results**: Obtained outcomes showed that tested PERK inhibitor significantly reduced ER stress-dependent phosphorylation of the eIF2α at a concentrations 25 μM (45%) and 50 μM (59%). Inhibitory compound also significantly inhibited HT-29 cells viability in a dose- and time-dependent manner. No significant cytotoxicity effect was observed toward CCD 841 CoN cells. As compared to controls, a significant cytotoxic effect of the PERK inhibitor toward HT-29 cells was noticed at a concentration of 50 μM and higher at all incubation times.

**Conclusion**: Potent, highly-selective inhibitors toward PERK may provide a ground-breaking, anti-cancer treatment strategy via activation of the pro-apoptotic branch of the PERK-dependent UPR signaling pathway inducing the apoptotic death of cancer cells.

This work was supported by grant PRELUDIUM no. 2015/19/N/NZ3/00055 from the Polish National Science Centre, grant OPUS no. 2016/23/B/NZ5/02630 from the Polish National Science Centre, grants of Medical University of Lodz, Poland no. 502-03/5-108-05/502-54-224-18 and no. 564/2-000-00/564-20-031.

**Title:** Small-molecule PERK inhibitors as a novel treatment for primary open-angle glaucoma

**Authors:** Wioletta Rozpędek, Adam Wawrzynkiewicz, Dariusz Pytel, J. Alan Diehl, Ireneusz Majsterek

**Session:** Poster

**Introduction**: Primary open-angle glaucoma (POAG) is one of the most common cause of irreversible visual impairment worldwide. The main risk factor constitutes an elevated intraocular pressure (IOP). Currently used treatment strategies for POAG are still insufficient, since are symptomatic and may only reduce IOP. There are not focused on molecular processes involved in the pathogenesis of the disease. The newest data has reported that activated under severe and prolonged Endoplasmic Reticulum (ER) stress conditions PERK-dependent Unfolded Protein Response (UPR) may constitute a crucial reason on the molecular level for POAG development and progression.

**Aim of the study**: The main purpose of the presented study was to evaluate the effectiveness of the selected PERK inhibitory compound.

**Material and methods**: Experiments were performed on the human astrocytes (HA-r) cell line. To evaluate the inhibitory activity of the investigated compound the level of p-eIF2α, as the main substrate of PERK, was measured by the Western blot technique. Cells were pretreated with the PERK inhibitor at a concentration range of 3 μM – 50 μM, and subsequently to evoke ER stress conditions treated with thapsigargin (500 nM) and incubated for 2h. A positive control constituted HA-r cells treated only with thapsigargin, whereas a negative control untreated cells. Moreover, the level of apoptosis was evaluated using the caspase 3 activity assay. HA-r cells were treated with the investigated PERK inhibitor at 3 μM and 50 μM concentrations and incubated for 24h. A positive control constituted cells treated with 1μM staurosporine, whereas negative control untreated cells.

**Results**: Western blot analysis showed that evaluated PERK inhibitor significantly inhibit eIF2α phosphorylation at 25 μM concentration. Evaluation of the level of apoptosis demonstrated that there was no a significant number of death HA-r cells after their 24h treatment with PERK inhibitor both at a concentration of 3 μM and 50 μM.

**Conclusions**: Obtained results have suggested that PERK inhibitors may effectively inhibit the pro-apoptotic branch of the UPR signaling pathways, that is the main reason of cell death and results in the development of symptoms of glaucoma. Thereby, small-molecule PERK inhibitors may constitute a novel, target-based treatment strategy for POAG.

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**Title**: Body image concerns and emotional state in patients with hormone secreting pituitary adenomas

**Authors:** Neda Daukšaitė, Kamilė Galdikienė, Aistė Pranckevičienė, Martyna Juškienė, Robertas Knispelis, Birutė Žilaitienė

**Session:** Poster

**Introduction**: Pituitary adenomas (PA) histologically are benign, however a portion of PA are functional and have potent endocrine effects. Secreted hormones frequently include prolactin, growth hormone (GH) and adrenocorticotropin (ACTH). Hypersecretion of mentioned hormones can lead to more obvious clinical manifestations, such as amenorrhea-lactation syndrome or decreased libido (prolactinoma), central obesity, moon face, hirsutism and facial plethora (Cushing's disease), or dysmorphic facial features, including macrognathia and enlargements of lips, nose and cheekbones (acromegaly). These factors can cause body image concerns (BIC).

**Aim of the study**: To evaluate relationship between the BIC, mood symptoms and PA's hormonal activity.

**Materials and methods**: The study was conducted in a tertiary care hospital in the Department of Endocrinology after institutional ethics committee approval and valid informed consent. We evaluated 31 patient who underwent endoscopic transphenoidal PA's surgery during the period from June to September of 2018. Body image was evaluated using 10-items self-rating Body Image Scale, depressive and anxiety symptoms were assessed using Patient Health Questionnaire-9 and Generalized Anxiety Disorder-7.

**Results**: 31 patients were enrolled between 23 and 76 years old with an average age of 50.8 ± 4.84 years. 7 (22.6%) patients were diagnosed with ACTH producing adenoma, 8 (25.8%) with prolactinoma and 16 (51.6%) with GH-secreting PA. 23 (74.2%) of all patients had macroadenomas (1-3 cm diameter) and other 8 (25.8%) – microadenomas (<1 cm). All patients underwent endoscopic transsphenoidal approach. Among the 31 patients, complete tumor removal was demonstrated in 15 patients (48.38%) and subtotal resection was demonstrated in 16 (51.61%) patients. A number of postoperative complications were exhibited by patients, including 4 (12.9%) patients with transient diabetes insipidus, 8 patients (25.8%) with hypopituitarism. Patients with different types of PA did not differ significantly in total level of body image concerns (Kruskal-Wallis test, chi square = 0.41, p=0.82). However, reported level of BI concerns was high. 50% of somatotropinoma patients and 57.2% of ACTH producing PA patients reported feeling less physically attractive due to disease. 42.9% ACTH producing PA patients felt lost their sexual attractiveness and that their body is less hole due to illness. 18.8% of somatotropinoma patients reported avoiding interactions with other people due to their appearance. Level of BIC correlated significantly with depressive (Spearman r=0.65) and anxiety symptoms (Spearman r=0.44).

**Conclusions**: At least half of patients with hormonally active PA from our study group had major body image concerns. There was no difference in the level of body image concerns between patients with GH-secreting PA, prolactinomas and ACTH-secreting PA. Higher scores of Body Image Scale were related to increased levels of depression and anxiety.

**Title**: Transcatheter arterial coil embolization in patients with peptic ulcer bleeding: preliminary results of 5-years experience in single centre

**Authors**: Dmitrijevs I., Pudule S., Ponomarjova S., Kratovska A., Kaminskis A., Ivanova P., Bernsteins A., Pupelis G.

**Session:** Poster

**Introduction**: Transcatheter arterial embolization (TAE) is alternative treatment possibility for patients with high – risk peptic ulcer or the management of acute peptic ulcer bleeding that is refractory to endoscopic hemostasis.

**Aim of the study**: The aim was analysis of the association between TAE with coils as the only embolic agent and peptic ulcer rebleeding in 30-day post-procedure period.

**Material and methods**: A retrospective analysis was carried out, based on the data of 144 consecutive patients (82 men, 62 women, mean [±SD] age 67.4±14.5) who underwent TAE with coils as the only embolic agent for acute peptic ulcer bleeding in 2013 to 2018 in Riga East University hospital. An analysis was performed between early rebleeding rate, mortality and the following factors: patient sex, age, stage of Forrest classification, anatomic localization of the ulcer and embolized artery.

**Results**: The technical success rate of the embolization procedure with coils was 99.3%. The clinical success rate of the embolization procedure with coils was 79.1%. Early rebleeding within 30 days after embolization occurred in 17 (11.3%) patients and was generally managed with surgery. 9 (6%) patients died within 30 day post-procedure period including three who died from rebleeding and 6 died from another complications (heart failure, lung oedema, pneumonia et al.). Coil migration was detected in 2 (3%) patients without clinical importance. No late bleeding recurrences were reported. There were no significant correlation between age, mortality, rebleeding and TAE with coils as the only embolic agent ($p > 0.05$). There were no association between anatomic localization / embolized artery and rebleeding of peptic ulcer.

**Conclusions**: Our experience demonstrate that TAE with coils as the only embolic agent is a relatively safe treatment method for acute peptic ulcer bleeding and alternative to surgery for inoperable high-risk patients with comorbidities.

**Title**: Does pregnancy planning affect the course of pregnancy and conditions of a newborn?

**Authors:** Mikołaj Czerwiński, Justyna Gąsiorowska, Dominika Frąckiewicz, Magdalena Piesik

**Session:** Poster

**Introduction**: Pregnancy planning is one of the most important aspects of present-day Obsterics and Gynecology. The use of contraceptives may give either a possibility of pregnancy prevention, or the opportunity of the conception's accurate planning which is crucial for a woman to lead an adequate lifestyle that is most suitable for a child.

**Aim of the study**: The aim of this study was to examine whether pregnancy planning and women's awareness has any impact on its course and the condition of a newborn after birth.

**Materials and methods**: Results of the study were collected through anonymous electronic question form, on a group of women, who were pregnant at least once. Control group consists of women, which knew about the pregnancy from its begining and followed accurate recommendations for pregnant women. Experimental group consists of women, who didn't know about pregancy for the first few weeks and for that reason did not adhere to appropriate recommendations.

**Results**: 598 questionnaries were obtained. 159 were included to the experimental group in which alcohol had been drunk by 40% of women comapred to 34% women in the control group. For the question about smoking cigarette, percentage of women answering „yes" was respectively 30 and 22. The obtained average in the Apgar scale is 9,42 for newborns of women from experimental group and 9,77 for women from the control group.

**Conclusions**: Results of this study show, that health state of newborns born by women from the control group was better than newborns of women from the experimental group. Beside factors described in this study, like X-rays, tobacco smoking or drinking alcohol, which obviously have a bad impact on the pregnancy, we should also take under concideration the psysical state of future mothers and their attitude to getting pregnant. Women which had the opportuninty of planning a pregnancy had the abbility of a better care taking over themselves than women, who began their pregnancy unplanned. All these factors, mental and psychical, signoficantly impact on growing of the fetus and the state of the newborn after delivery.

**Title**: Endocrine and behavioral alterations in stressed early adolescence and adult Wistar rats

**Authors:** Tomasz Ludyga, Ewa Obuchowicz, Miłosz Gołyszny

**Session:** Poster

**Introduction**: Maternal separation in neonatal period of life (MS) has been demonstrated to trigger neuropsychiatric disorders in adulthood, particularly depression and anxiety. Stressed rats presents hyperactivity of the HPA axis and anxiety-like behavior in adulthood. Furthermore, adolescent rats exposed to stressors show anxiety-like behavior, when they are testing. Interestingly, a number of studies have shown that also repeated exposure to acute stress during adolescence may have long-term consequences.

**Aim of the study**: The purpose of the study was the estimation of the behavioral and endocrine alterations in stressed and non-stressed Wistar rats.

**Materials and methods**: We performed stress protocols: 1)MS in male and female Wistar rats; 2)in adolescence consists of 3 days of exposure to stressors. Consequences in adolescence and adulthood were measured in the OF and EPM. Moreover, we measured activity of the HPA axis in adulthood.

**Results**: In adolescence, we noticed an increase of the anxiety-like behaviors in part of parameters of the OF in control group with acute stress. MS not elevated these behaviors. In adulthood, the alterations were similary. We observed an elevation of the ACTH level in MS male rats with acute stress, but not in control male rats. Neverthless, in female control rats ACTH level was highly increased. Further, we observed an elevation tendency in CORT level in both control group (male) with acute stress and MS group (male) with acute stress.

**Conclusions**: The acute stress may causes alterations in female and male Wistar rats. The HPA axis hyperactivity is also observed.

**Title**: Severe neonatal early-onset infection: a case study

**Authors**: Agata Szczepanowska, Marta Żebrowska

**Session:** Poster

**Introduction**: The incidence of early-onset neonatal infections in well-developed european countries fluctuates from 0,01 to 0,53 per 1000 live births. The aim of this case study is to present an example of early-onset neonatal infection as well as to emphasize the risk of major severity of the disease course with probable fatality.

**Case report**: A neonate from the second pregnancy, the second labor, born in 38. gestational week by elective caesarean section presented escalating dyspnea in the first hours after birth. The child was intubated and transported to intensive neonatal care unit; due to saturation declines (80%) and CHD suspicion; prostin was administered. At admission the neonate presented severe general condition, blue skin colour, coarse vesicular breath sounds, enlarged liver and feeble pulse on femoral arteries. The only laboratory testing deviation was neutrophil leukocytosis (negative CRP and cultures), chest radiograph revealed inflammatory changes and echocardiography excluded CHD, oxygen blood saturation was 90%. The working diagnosis was pneumonia and respiratory failure. Hence, SIMV mode with high ventilation parameters (FiO2 0,7, f 50/min, PIP 24, PEEP 5 cmH2O) was established. Drugs administered at admission were: ampicillin, amikacin, fluconazole, curosurf, MgSO4, midazolam and parenteral nutrition.

During the first 12 days of hospitalization the neonate's general condition remained severe. The child presented mucous excretions with pus from the respiratory tract, increased intensity of vesicular breath sounds, bilateral crackles, enlarged liver. CRP increase up to 15mg/L was observed although cultures remained negative. Cardiology consultation and echocardiography diagnosed pulmonary hypertension (right ventricular pressure 55mmHg) and PFO, inhaled NO were administered. Acid-base balance testing revealed acidosis and CO2 retention, saturation declined to 70%. Despite increased ventilation parameters (FiO2 1,0 with high PIP and PEEP) condition deteriorated. Dobutamine was administered and ventilation mode switched to HFO. Saturation and acid-base balance improved. Due to peripheral oedemas patient received furosemide. Ambroxoli hydrochloridum, budesonide and fenoterole with ipratropium were also provided. After the first week of hospitalization ventilation mode was changed again to SIMV. Patients' general condition started to improve gradually. After 10 days of ampicillin and amikacine combined therapy cefuroxime was administered due to persistence of CRP elevation. On the 15. day of hospitalization passive oxygen therapy and oral nourishment were introduced. After 17 days patient was discharged.

**Conclusions**: Despite antibiotic prevention in a pregnant, perinatal infections remain a serious threat for the neonates, risking severe course and probable fatality. Severity of clinical condition may not correlate with low levels of inflammatory markers and negative cultures.

**Title**: Expression levels of TP53β and TP53γ in correlation to NPM1/FLT3 mutations in acute myeloid leukemia

**Authors**: Karolina Matiakowska, Alicja Bartoszewska-Kubiak, Ewelina Donarska, Malgorzata Morgut-Klimkowska

**Session:** Poster

**Introduction**: TP53 encodes a tumor suppressor protein which consists of transactivation, DNA-binding and oligomerization domains. Due to alternative splicing it may exist in 12 different isoforms. Alternative splicing of intron 9 leads to production of 2 different proteins, p53β and p53γ, without oligomerization domain (stop codon is localized in exon 9b). These isoforms can be present in acute myeloid leukemia (AML) cells. p53β binds to BAX promoter and can induce apoptosis independentfrom p53 wt. It also regulates p53 activity. In AML high expression of p53β and p53γ proteins may play role in response to treatment by enhancing cells sensitivity to chemotherapy.It has been showed that patients have longer survival after treatment.

NPM1 (nucleophosmin gene) mutations are frequent alterations in normal karyotype AML (NK AML). Until now 56 different mutations of exon 12 of NPM1 have been described, mostly insertions. The NPM protein plays an important role in cell cycle and apoptosis control. It cooperates with several proteins, including p53 and ARF. While patients with NPM1 mutations are stratified to favorable risk group,internal tandem duplications (ITD) in the fms-like tyrosine kinase-3 gene (FLT3)are poor prognosis factors.

**Aim of the study**: The aim of the study was to assess mutational status of NPM1/FLT3 in association with TP53beta and TP53gamma expression levels.

**Material and methods**: 36 NK AML patients with NPM1 and/or FLT3ITD mutations were included in the study.Relative expression results of TP53β and TP53γwere analyzed with ΔΔCt method, with ABL as a control gene and K562 cell line as a calibrator.

**Results**: In all 36 cases,TP53β and TP53γ transcripts were detected. 17 patients were NPM1+/FLT3-, 14 were NPM1+/FLT3+ and 5 were NPM1-/FLT3+.Assessed median expression level of TP53β was much higher (ΔΔCt43,87)than TP53γ(ΔΔCt10,52; p=0,000027). Furthermore, according to statistical analysis, expression level of TP53γwas significantly associatedwithNPM1/FLT3 mutations (p=0,008). We also classified patients according to median expression value of TP53 to two groups: with overexpression or with small expression. Median WBC count in patients with overexpression of both isoforms was higher (75,4 G/L) than in group where expression of both isoforms was below median value (30G/L). Expression level of TP53γ was also correlated to WBC (p=0,05) and patients' age (p=0,015).

**Conclusion**: Obtained results may indicate a clinical importance of analysis TP53 isoforms expression together with clinical data of patients.

**Title**: Frequency of mutations in the CALR and SRSF2 genes in patients diagnosed with essential thrombocythemia and primary myelofibrosis

**Authors**: Alicja Bartoszewska-Kubiak, Karolina Matiakowska, Malgorzata Morgut-Klimkowska, Ewelina Bielinska, Olga Haus

**Session:** Poster

**Introduction**: Primary myelofibrosis (PMF) and essential thrombocythemia (ET) are BCR-ABL1-negative myeloproliferative neoplasms (MPN). The most common alteration in PMF and ET is JAK2V617F mutation which is present in about 50-60% of patients. Besides, MPL mutations are indentified in about 4-5% of JAK2-negative patients. Mutations of the exon 9 of CALR gene are a very important marker for the diagnosis of ET and PMF in patients without JAK2/MPL mutations. Mutations of JAK2, MPL and CALR are mutually exclusive. "Triple negative" MPN cases, without any of them are associated with poor prognosis. Three driver mutations might be accompanied by other mutations whose pathogenetic relevance is even less clear (ASXL1, SRSF2, IDH1/2, EZH2, TET2, DNMT3A, and CBL). SRSF2 spliceosome mutations play a crucial role during RNA splicing pathway. The protein encoded by this gene is a member of the serine/arginine (SR)-rich family of pre-mRNA splicing factors, which constitute part of the spliceosome. Hotspot mutations in the exon 2 have been identified in PMF (3-17%) and in ET (3%)

**Aim of the study**: To evaluate mutational status of CALR and SRSF2 genes in Polish group with PMF and ET patients and to find phenotypic and clinical differences between mutated and nonmutated cases.

**Material and methods**: Using AS-PCR we selected 122 patients without JAK2/MPL mutations (58 PMF and 64 ET). DNA isolated from blood cells of patients were analyzed by Sanger sequencing to detect insertion/deletion of exon 9 of CALR gene and mutations of hotspot region of exon 2 of SRSF2 gene. The correlation of presence or absence of SRSF2 and CALR mutations was analyzed with Mann Whitney U Test.

**Results**: Out of 122 patients studied 6 (5%), with PMF, carried mutations of exon 2 SRSF2 gene and 41 (34%) (16 with ET, 25 with PMF) CALR exon 9 indel. Most patients with CALR gene mutation harboured type 1 (24 cases) and type 2 (9 cases) mutations. Mutation in exon 9 of CALR gene was rarely combined with SRSF2 mutations (1 case-0,8%). In the "triple negative" group we indentified 5 (4%) SRSF2 mutations and all of these cases showed a substitution change (c.284C>A, c.284C>T). We have not found any significant relationship between SRSF2 mutations and CALR gene mutations.

**Conclusions**: The percentage of CALR and SRFS2 positive Polish patients in the investigated group was lower than in other populations, and the study group should be enlarged. Moreover, a research on these mutations should cover others splicing pathway mutations which can be helpful for diagnosis and prognosis.

**Title**: Why the first grade medical students are committing unethical acts of violence towards the human cadavers during dissection?

**Authors**: Marcin Czeczelewski, Konrad Ślizień-Kuczapski

**Session:** Poster

**Introduction**: With the start of classes in the dissecting room, students take a different attitude towards the cadavers, trying to treat the human corpses in a proper way. However, inadequate acts, manifestations of disrespect to donated bodies during dissection happen.

**Aim of the study**: The aim of the study was to find the reason why students manifest disrespect to the cadavers.

**Material and methods**: The test method was based on a anonymous survey, consisting of three parts, self-made by the authors, containing 28 questions. Second part of the survey contained simple acts of disrespect to the bodies when third exemplary justifications for them. The responses were graded on the Likert scale and then rank to analyze the data by using the Spearman's correlation coefficient and the Mann-Whitney U test. In the survey has participated 309 respondents.

**Results**: Among assenters, 279 declared that they did commit any of unethical acts against corpses, anyhow the frequency of such practices was rather low. Looking at the results, we can see that the most frequently picked justification for incorrect behaviors was "I didn't think about what I am doing and whether it is morally correct". However, the explanation the least often chosen as reliable was "I considered the cadavers only as a tool for learning anatomy, which do not need a special treatment". The justification that correlated with the highest number of unethical acts was "The consent from the fellows to such acts, others did the same", nevertheless lack of reflection on action correlated with just one act less.

**Conclusions**: Lack of the reflection on the actions and the sense of acquiescence from the fellows for an inappropriate behaviors toward the cadavers, were the main reasons for the absence of respect for corpses from the student's side.

**Title**: High-intensity interval training and moderate-intensity continuous training in adults with Crohn's disease

**Authors**: Karolina Kubiak, Bartłomiej Wrzesiński, Anna Ziółkowska, Martyna Lamtych, Klaudia Kwiatkowska

**Session:** Poster

**Introduction**: Crohn's disease belong to one of the groups of inflammatory diseases diagnosed primarily in young people. The initial course of the disease is most often associated with abdominal symptoms. Severe diarrhoea, fatigue, weight loss, malnutrition, inflammation of the skin of eyes and joints are an alarm signal for further diagnosis for inflammatory disease. The basic diagnostic test is the examination of the coloscopy and the determination of the level of calprotectin in the stool. Disease activity is assessed using special questionnaires (CDAI).

**Aim of the study**: This study assessed the feasibility and acceptability of two common types of exercise training-high-intensity interval training (HIIT) and moderate-intensity continuous training (MICT)-in adults with Crohn's disease (CD).

**Material and methods**: The presented review uses the latest reports on the use of physical exercise in people suffering from inflammatory bowel diseases. For this purpose following databases were searched: PubMed, Google Scholar and Medline. Reports and results of studies regarding children and animals were not taken into account.

**Results**: Regular physical exercise is one of the forms of therapy recommended in the case of Crohn's disease. High frequency interval training (HIIT) and moderate intensity continuous training (MICT) can potentially contribute to improving physical fitness as well as disease related factors such as fatigue, mineral loss of bone tissue or an inflammatory problem.

**Conclusion**: Due to the fact that the problem particularly affects young people, actively undertaking various physical activities, not fully thought through and consulted. with the main, leading doctor – which may lead to various complications – the topic is the most up-to-date and should be paid attention to. Physical exercise remains a potentially useful adjunct therapy in CD.

**Title**: Visual disability in children in the XXI century

**Authors**: Jakub Dreliszak, Adriana Wielgus, Katarzyna Sas, Ewa Zieliński

**Session:** Poster

**Introduction**: The proper functioning of the eye organ enables functioning in everyday life, for children it is particularly important, because the lack of eye pathology allows for the proper development of the child. Among the youngest, pathological conditions associated with the eyesight appear disturbingly often, research shows that from year to year, the number of children with refractive errors and diseases affecting the eyesight organism is growing. This applies not only to Poland, or Europe but also to the World, according to the World Health Organization (WHO), the problem of eye diseases affects around 285.4 million people in the world (around 4% of the world's population), of which 39.4 million are blind people . According to estimates, about 1 to 2 million people lose their sight, according to the assumptions in 2020 there will be about 75 million blind people.

**Aim of the study**: The aim of the study was to assess the degree of disability depending on selected personal resources.

**Material and methods**: Documents from the Poviat Disability Assessment Team located in Bydgoszcz at 272 Toruńska Street have been analyzed. A retrospective analysis of the medical documentation of patients who applied for a disability certificate for a period of up to four years due to vision dysfunctions. Documentation of patients from January 2008 to February 2018 was analyzed. The study group consisted of 25 children.

**Results**: Among the residents of Bydgoszcz, half indicated a public school, 41.7% for a special school, and 8.3% for not attending school. Among the inhabitants of small towns, no one pointed to a special school, 88.9% pointed to mainstream schools, and the remaining 11.1% declared not attending school. 75% of Bydgoszcz residents, 88.9% of residents of small towns and 25% of rural residents indicated acceptance of the decision.

**Conclusions**: Between variables Problems with peers (according to parents' assessment) and The education system does not have a statistically significant relationship, as evidenced by $p>0.05$. There is no statistically significant relationship between the variables Education system and Place of residence, as evidenced by $p = 0.099$. There is no statistically significant correlation between the variables Parental Assessment of requirements regarding care requirements and Place of residence, as evidenced by $p = 0.083$. Between variables Parental assessment requirements for care requirements over the child and the period of validity of the judgment does not exist statistically significant dependence, as evidenced by p greater than 0.05.

**Title**: Ascorbic acid as a promoter and suppressor of carcinogenesis on the example of A-375 and RPMI-7951 cells

**Authors**: Klaudia Mikołajczyk, Magdalena Izdebska, Wioletta Zielińska, Marta Hałas-Wiśniewska, Aleksandra Opacka, Alina Grzanka

**Session:** Poster

**Introduction**: Ascorbic acid, also named vitamin C was first isolated in 1932 and it is a water-soluble six-carbon ketolactone synthesized from glucose by plants and most animals. Human has lost the ability to synthesize ascorbic acid due to the lack of L-gulonolactone oxidase oxidizing L-gulonolactone to ascorbic acid. For this reason, it must deliver this vitamin to the body with food or in the form of supplements. The daily requirement of the human body for ascorbic acid is on average 60 mg. The reversible dissociation of ascorbic acid leads to the formation of an ascorbic anion, which, by giving up one electron, becomes an ascorbic radical. These properties affect ascorbic acid is the preferred antioxidant with properties that inhibit carcinogenesis. Based on literature data, ascorbic acid at appropriate concentrations can also promote neoplastic transformation.

**Aim of the study**: Antitumor and carcinogenesis display of action through the use of ascorbic acid monotherapy for cancer cells. The aim of the study was also to compare the effectiveness of vitamin C on cells isolated from the primary tumor and metastasis

**Material and methods**: A commercially available human A – 375 and RPMI - 7951 melanoma cell line was used for the study. The cells of the line used were isolated from the primary tumor. Human melanoma cells were treated with a solution of vitamin C at various concentrations and two incubation times: 24 and 48 hours. The evaluation of the cytotoxic effect of specific doses of vitamin C was determined using the cell survival test (MTT). By means of Mayer staining, the hematoxylin was characterized by cell morphology and the types of death occurring after treatment with vitamin C. Cytometric analysis allowed to determine the percentage of apoptotic cells. A clonogenicity test was also carried out allowing observation of colony formation by treated cells relative to control cells.

**Results**: Based on the tests and analyzes carried out, the key concentrations were selected in which tumor suppression occurs through the action of vitamin C. Based on the results obtained, the concentration that promotes neoplastic transformation was also determined.

**Conclusion**: Ascorbic acid is characterized by double efficiency in relation to tumor cells of the primary tumor and metastais. Vitamin C doses achieved by oral supplementation appear to exhibit properties promoting tumor growth. This is the reason for stopping taking vitamin C during cancer. The opposite situation is observed during higher concentrations achieved in the plasma during intravenous infusion of ascorbic acid, which inhibit the process of neoplastic transformation.

**Title**: Body composition analysis of the elderly

**Authors**: Alina Jaroch, Daria Bieniek, Hanna Bednarek, Filip Biernacki

**Session:** Poster

**Introduction**: Among the elderly a common observation is a change in body composition, resulting in an increased body fat content and decreased muscle mass. Therefore, the assessment of a proper body weight should not be based on the BMI value itself, but include body composition analysis. Currently, the most accurate information can be obtained using devices that perform segmental body composition analysis.

**Aim**: To assess the body composition and other antropometric measurement for community-living elderly.

**Materials and methods**: 30 elderly took part in the study.

**Title**: Evaluation of enthesis activity by ultrasonography (US) in patients with ankylosing spondylitis

**Authors**: Lolita Gundareva, Inita Buliņa

**Session:** Poster

**Introduction**: Recognition of the importance of enthesitis as the pivotal pathological process underpinning spondyloarthropathies (SpA) has increased in recent years. Enthesitis is associated with increased disease activity and reduced quality of life. Hypoechogenicity, increased thickness of tendon insertion, calcifications, enthesophytes, erosions, and Doppler activity have been identified as important US characteristics of enthesitis.

**Aim of the study**: The aim of this study was to assess sensitivity and responsiveness of ultrasound in detecting enthesitis for ankylosing spondylitis (AS) patients, positive HLA B27 and receiving anti-TNF α therapy for at least 6 months in clinical remission.

**Materials and methods**: The prospective study was conducted at the Pauls Stradiņš Clinical University Hospital. All US examinations were performed in a darkened room by a rheumatologist (SR) trained in this imaging technique blinded to all clinical data. Medical Systems ultrasound Aplio i800 provided with linear multifrequency probe (i18LX5 MHz) was used. The presence and location of enthesitis was recorded with reference to the Outcome Measures in Rheumatology Clinical Trials (OMERACT) preliminary definitions of pathology. The following entheseal areas were bilaterally assessed: common extensor tendon insertion into lateral epicondyle, proximal plantar fascia, distal Achilles tendon, both distal and proximal patellar tendon insertions, and distal quadriceps tendon. Data were analysed using IBM SPSS Statistics 22. Statistical significance was set at $p<0.05$.

**Results**: 16 patients were included in the study 13 were male patients (81,3%), 3 were female (18,8%). Their age ranged from 4 to 36 years. Mean age was 45,38 years SD 10,436. With a disease duration from 1 to 8 years. The BASDAI score ranged from 0 to 8,6 the BASFI score ranged from 0 to 7,8 and CRP level ranged from 2 to 8,2 mg/L. 192 enthesis insertion sites were screened. No acute changes were observed in any of the enthesis. Chronic changes were in the right common extensor tendon - 12,50% (n=16), Left common extensor tendon enthesophytes -18,75% (n=16). Right distal quadriceps tendon enthesophytes - 37,50% (n=16) and calcifications 6,25% (n=16.Left distal quadriceps tendon enthesophytes - 25,00% (n=16), calcifications - 6,25% (n=16). Right distal patellar tendon insertions enthesophytes - 6,25% (n=16) calcifications - 18,75% (n=16).Left distal patellar tendon insertions enthesophytes - 18,75% (n=16) and calcifications - 18,75% (n=16). Right distal Achilles tendon enthesophytes - 31,25% (n=16), calcifications - 25,00% (n=16). Left distal Achilles tendon enthesophytes - 37,50% (n=16), calcifications - 6,25 % (n=16). Right proximal plantar fascia enthesophytes 12,50% (n=16).

**Conclusions**: There was no acute changes were found in the entheses. The more frequent locus of chronic changes was enthesophytes and calcifications.

**Title**: New times of cervical collar?

**Authors**: Joanna Androsiuk-Perkowska, Radosław Perkowski, Marcin Kożuchowski

**Session:** Poster

**Introduction**: Protection of the cervical spine at the place of the event is a priority for medical emergency teams treating patients who have suffered an injury. However, there are doubts about the effectiveness and justness of stabilization cervical spine in the cervical collar.

**Aim of the study**: The aim of the study is to present current data on the justness of using a cervical collar.

**Materials and methods**: The literature was reviewed using the medical databases PubMed, Elsevier, Ebsco and Google Scholar using key words such as: spine protection, trauma, injuries. The study included publications regarding use of cervical collar in emergency medicine, assessing the frequency and validity of its use.

**Results**: Studies showed that the actual confirmed frequency of spinal injuries in traumatized patients is low. It has not been confirmed yet that the use of cervical collar has been associated with more injuries in this area. The use of cervical collar does not reduce the time of hospitalization. Some countries are attempting to introduce protocols regarding the use of cervical collar. Using it depends on the clinical condition, level of consciousness of the patient, and not only on the mechanism of injury, as it was before now. The potential benefits of using vacuum mattresses to immobilize the patient are indicated.

**Conclusions**: The reports on the use of cervical collar should be changed to avoid unnecessary restrictions and possible complications. Further studies are needed.

**Title**: Impact of VGVAPG peptide on S100B protein expression in human umbilical vein endothelial cells (HUV-EC-C)

**Authors**: Agnieszka Grobelczyk, Szymon Cisek, Konrad A. Szychowski Ph.D , Jan Gmiński M.D., Ph.D, Professor

**Session:** Poster

**Introduction**: Elastin is a protein of mammalian organisms, which provides elasticity to many connective tissues. Degradation products of elastin, elastin-derived peptides (EDPs) are involved in various physiological and pathological processes. The VGVAPG sequence is the most common in elastin molecules and exhibit broad range of biological activities. S100B protein is a calcium-binding protein, functioning as a regulator of intracellular activities and as an extracellular signal. S100B protein has a key role in migraines and is present in the circulatory and nervous system. Moreover, elevated level of S100B protein in patient serum with coronary artery disease has been detected.

**Aim of the study**: Therefore, the aim of our study was to evaluate impact of VGVAPG peptide and calcium channels antagonists (Verapamil, Nifedipine) on level of S100B protein in human umbilical vein endothelial cells (HUV-EC-C).

**Materials and methods**: The HUV-EC-C were cultured in F-12K medium supplemented with 10 % FBS, ECGS and heparin. The cells were exposed to VGVAPG and in co-treatment with Verapamil or Nifedipine for 24 h. Afterwards cells were collected and S100B protein expression was measured by ELISA method.

**Results**: The results showed that after 24 h VGVAPG peptide had a significant effect on the expression of S100B protein. Moreover, both Verapamil and Nifedipine modulate expression of S100B affected by VGVAPG peptide.

**Conclusion**: According to this results we want to mention that this could be a promising area for further researches. However, more research underlying mechanism of VGVAPG peptide and other modulators actions on S100B protein is needed.

**Title**: Neuroregeneration of a peripheral nervous tissue – a review of new ways and possibilities of development

**Authors**: Eliza Fereniec, Łukasz Szylberg

**Session:** Poster

**Introduction**: The issue of the regeneration of nerves is a common problem in current medicine. Today we can specify two main research areas leading to the solution of this problem – stimulation of Schwann cells regeneration and searching for the most accurate scaffold, which will enhance the cells growth.

**Aim of the study**: The aim of the study is to review new methods and to focus on selecting the most promising ones.

**Materials and methods**: The PubMed and ScienceDirect databases have been used. They have been searched for reports of peripheral neuroregeneration, reported from Jaunary 2015 to December 2018. The inclusion criteria were: English, research concerning the regeneration of Schwann cells or scaffolding in peripheral neuroregeneration. The exclusion criteria were: neuroregeneration in central nervous system and the ways of neuroregeneration focused on old neurons survived after the nerve damage.

**Results**: The study is the analysis of gathered information concerning recent innovative neuroregeneration methods. The Schwann cells regeneration group of research includes: genetically modified mesenchymal stem cells, nucleus pulposus progenitor cells, signal transducer and activator of transcription 3, secreted phosphoprotein 1 and erythropoietin. The scaffold group includes: acellular nerve allografts, chitosan, silk fibroin and gelatin scaffolds.

Among the described methods chitosan and chitosan degradation products research seems to provide results. Due to the influence on macrophages activation, easy ways of adding factors on their surface, great bio-tolerance and positive effect as the pain reducer, chitosan is one of the auspicious materials in neuroscaffolding. However, chitosan is also preferably examined substance which suggests that other neuroregeneration enhancers may present preferable actions after thorough examination.

**Conclusions**: To conclude the neuroregeneration research is to discover the methods which may recreate a neural tissue more rapidly and effectively than a natural regeneration process. The determinant is autologous nerve graft, which maintains golden standard in peripheral nerve regeneration. Despite years of research it is still to be achieved. However, recent studies accelerate this process and push the boundaries closer to the full control of neuroregeneration.

**Title**: Is there any correlation between the symptoms of dry eye and isotretinoin?

**Authors**: Anna Nowak, Magdalena Kułak, Jacek Dziedziak

**Session:** Poster

**Introduction**: The primary indication for isotretinoin is the treatment of severe acne. The main effect of this drug is the inhibition of sebaceous glands, as well as Meibomian glands. Consequently, the secretion of the glands may be lost and it can result in ophthalmic complications. Among them, the dry eye syndrome is the most common one.

**Aim of the study**: The aim of this study is to evaluate the effect of isotretinoin therapy on the development of symptoms of dry eye syndrome and its severity which occurred prior to the therapy. Furthermore, it was also assessed whether the patients were informed about the possible side effects.

**Material and methods**: The data used in this study was collected by means of an online survey. The parameters evaluated presence of pre- and post-treatment symptoms, and also their severity. Usage period, dose of the drug, presence of other ophthalmic and systemic diseases also have been taken into consideration.

**Results**: Less than 60 percent of respondents presented symptoms before starting the treatment, but their severity was determined in 15 percent of cases at 5 or more on a scale from 0 to 10. 82 percent reported symptoms after treatment, with 55 percent indicating their severity at 5 or more on the same scale. The dominant symptoms before and after the treatment were burning and redness of the eyes. In addition, 25 per cent responded that they were not informed about possible side effects in the form of dry eye symptoms.

**Conclusions**: The development of symptoms of dry eye syndrome during isotretinoin therapy is a serious problem which can lead to the development of severe ocular complications among young patients. In addition, an alarmingly large number of respondents were not informed about the possibility of the above mentioned symptoms.