7TH LUBLIN INTERNATIONAL MEDICAL CONGRESS

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7TH LUBLIN INTERNATIONAL MEDICAL CONGRESS FOR STUDENTS AND YOUNG DOCTORS

LUBLIN, 26TH - 28TH NOVEMBER 2020

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OF THE MEDICAL UNIVERSITY OF LUBLIN

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ABSTRACTS

Anaesthesiology, Intensive Care and Emergency Medicine

COVID-19 AND ITS IMPLICATIONS ON THE CPR'S QUALITY IN PRE-HOSPITAL PATIENTS - A PARADIGM SHIFT. AN INTERNATIONAL REVIEW.

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Introduction: Updated guidelines for CPR have been released in connection with COVID-19 pandemic. The new recommendations are designed to reduce the risk of SARS-CoV-2 transmission. The contagious virus increases the danger of incidental infections, both for rescuers and rescuees, which visibly limits the span of the rescuing activities. A question arises as to the efficacy of current CPR and its long-term implications such as infection and death due to infection or insufficient CPR. The aim of the study is to collect and summarize international amendments to CPR guidelines, implicated by COVID-19. Furthermore, to estimate their impact on the quality of CPR in pre-hospital settings.
Methods: Available literature has been reviewed using the bibliographical data: Medline, Google Scholar, and ScienceDirect by typing the keywords: CPR, OHCA, Covid-19.
Results: The underlying principles for CPR remain the same. The changes for lay rescuers include only "seeing" if rescuee breathes, covering their mouth and conducting CPR without rescue breaths. Professional rescuers shall be equipped with personal protective equipment. Any attempt at resuscitation is still better than no attempt.
Conclusions: It should be emphasized that new guidelines are based on a limited amount of evidence and it's uncertain whether chest compressions or defibrillation generate a real risk of SARS-CoV-2 transmission. However, they may delay the provision of first aid to people in cardiac arrest and hence lead to a considerable increase in resuscitation failures. We are witnessing an uncanny paradigm shift, in which the rescuer vs rescuee relationship has been blurred.

Keywords: Covid-19, new Covid-19 CPR guidelines, OHCA

VIVOSTAT FIBRIN SEALANT EFFECT ON BLOOD VOLUME LOSS FOLLOWING REVISION OF HIP JOINT REPLACEMENT SURGERY

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Background: Hip replacement revision surgeries are complex from surgeon perspectives. In such complex, large-scale surgeries higher blood loss can cause risk increase during surgery, as well as complicate the patient's rehabilitation options. In order to reduce amount of blood lost additional resources should be used. In our case, the use of ‘’Vivostat’’ fibrin sealant reduced postoperative bleeding through the drain in the first 12 hours after surgery.
Case Report: Patient 75 years old, hospitalized in Traumatology and Orthopedics Hospital of Riga for planned hip revision surgery due to periprosthetic femoral fracture. In surgery only femoral component was changed. During the hemostasis stage of the revision surgery ‘’Vivostat’’ fibrin sealant was applied to the bleeding tissue in an open wound. After application, the wound was closed by layers and a drain was inserted. During the surgery 360 ml of blood loss was recorded by the ‘’Cell saver’’. Within first 12 hours after the surgery 300 ml of blood loss was recorded and the drain was evacuated as no further bleeding was observed. After analysis and comparison of data, an average of 1051 ml of blood were lost in 23 same type of surgeries with same surgical tactics and patient’s positioning. Also 405 ml of blood within first 12 hours after surgery.
Conclusions: The application of ‘’Vivostat’’ fibrin sealant during hemostasis phase of hip revision surgery may have ensured smaller blood loss post-operatively, early drain evacuation and reduced potential postoperative risks to the patient.

Keywords: Blood loss, Fibrin sealant, Vivostat, Revision of hip joint

A SERIES OF RHYTHM AND CONDUCTION DISORDERS SUGGESTIVE OF THE EXISTENCE OF A BINODAL DISEASE REVEALED BY THE ADMINISTRATION OF DIGOXIN IN AN ELDERLY PATIENT WITH SUPRAVENTRICULAR PAROXYSMAL TACHYCARDIA WITH SUPPLE COMPLEXES ACCOMPANIED BY ACUTE LEFT HEART FAILURE.

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Background: Sinus node disease is a disease of the sinus node that can lead to sinus paralysis with the disappearance of atrial systole and serious consequences in hemodynamics. The association of a pathology of the atrioventricular node leads to so-called binodal disease with harmful consequences such as heart failure, which in severe forms can lead to complete blockage of impulse transmission from the atrium to the ventricle, causing extreme bradycardia and leading to asystole and patient death. , therefore the application of a therapeutic sanction as soon as possible is vital.
Case Report: Introduction: BI, male, 70 years old, presented with palpitations, dyspnea, dry cough. The patient is pale, in orthopnea, facial sweating. Clinical examination: tachycardic, rhythmic heart sounds, pulse 172 / minute, blood pressure 120/70 mmHg, basal crackles, bilateral. Case history: The clinical charges occurred suddenly half an hour before the emergency presentation of a subject with no known pathological history. Investigations: ECG shows tachycardic rhythm (172 / minute), supple QRS complexes, QRS axis at + 60? without identification of atrial electrical activity. The case was interpreted as a paroxysmal supraventricular tachycardia (PSVT) accompanied by acute left heart failure.
Treatment/Results: Under monitoring conditions, nasal oxygen mask, 0.25 mg digoxin iv and 40 mg furosemide iv (at the rejection of the external shock) are administered. There were 70 / minute sinus rhythm with supple QRS complexes (identical to those in the tachycardic episode), QRS -60? axis, first degree atriovetricular block (I degree AVB) (PR = 0.28 s), digital effect and left anterior bundle branch block (at 15 minutes) simultaneously with the improvement of clinical charges. At 60 minutes from the hospitalization, there is a lower junctional rhythm 58 / minute, QRS + 75? axis and minor RBBB. At 120 minutes after admission, the patient had a sinus rhythm of 60 / minute, supple QRS complexes, QRS axis + 75?, I degree AVB (PR = 0.24 s). Completely clinical asymptomatic, serum biology and heart cavities (echography) normal.
Conclusions: Unmasking of sinus dysfunction in sinus node disease after therapeutic doses of digoxin raises the suspicion of latent sinus node suffering clinically expressed by the presence of PSVT. The case suggests diffuse interest in the entire cardiac excitoconductive tissue. The patient requests the discharge, under signature, contrary to the medical recommendations for further exploration (Holter EKG, electrophysiological study).

Keywords: Rhythm disorders, conduction disorders, binodal disease, digoxin, elderly patient, supraventricular paroxysmal tachycardia, acute left heart failure.

FATAL LUNG FIBROSIS DURING BLEOMYCIN TREATMENT OF TESTICULAR GERM CELL TUMOR

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Background: Bleomycin(BLM) is the main drug used in chemotherapy of testicular germ cell tumor, however, it causes many side effects, for instance, lung fibrosis, which rapidly leads to death. Early diagnosis of lung fibrosis combined with fast treatment implementation improves a patient's survival rate.
Case Report: A 35 years old man was admitted to the hospital with suspected urinary tract inflammation and rapidly progressing respiratory insufficiency. The patient was during treatment of a germ cell tumor, metastatic testicular cancer, after four cycles of BLM. On examination, the patient was conscious, despite very low pO2-23mmHg. Medical interview and imaging studies showed bleomycin-induced lung fibrosis. Intubation and mechanical lung ventilation in analgosedation was made due to progressive respiratory failure,. The circulatory system was insufficient and required the infusion of catecholamines under the control of hemodynamic PICCO monitoring. There was no significant improvement in respiratory symptoms, so it was decided to perform a CT scan of the chest. It confirmed the progression of interstitial changes as well as mediastinal and right pleural cavity emphysema and the patient got inserted into a chest drain. The following treatment was used: meropenem, enteral nutrition, IPP, clarithromycin, midazolam, insulin, ambroxol. dexamethasone and low molecular weight heparin. After 11 days of hospitalization, the patient in a very serious condition was transferred to another hospital, where he died five days later.
Conclusions: This case suggests that BLM chemotherapy can occur severe toxicities such as bleomycin-induced pulmonary fibrosis. We recommend a pulmonary function assessment of patients receiving bleomycin.

Keywords: bleomycin lung fibrosis germ cell tumor BIP

THE EFFECT OF OMIGANAN ON CANDIDA SPP. CLINICAL STRAINS ISOLATED FROM BLOOD

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Introduction: Fungal sepsis is associated with worse outcomes compared to sepsis of a different etiology. Among others, the above results, from frequent occurrence of fungi's resistance to standard antimicotics and from their ability to create biofilm. Antimicrobial peptides (AMPs), which are more active against Candida in both planktonic and biofilm form, seem to be an alternative to classic antifungal drugs. The representative of AMPs examined in this paper is Omiganan. The aim of the study was to compare the effect of Omiganan and fluconazole on clinical isolates of Candida spp. in both planktonic and biofilm forms and to evaluate the possibility of using these compounds in combined antifungal therapy.
Methods: We examined 31 blood-derived clinical Candida spp. strains and 2 reference strains: C. glabrata ATCC 15126, C. albicans ATCC 90028. For each isolate, the minimal inhibitory concentration (MIC), and the minimal biofilm eradication concentration (MBEC) of fluconazole and Omiganan was determined. The tests were carried out using the microdilution method in liquid medium (RPMI 1640) in accordance with CLSI guidelines. The effect of the combined action of these substances (FIC index) was established using the checkerboard method.
Results: The results of this study confirm previous reports indicating the potential efficacy of Omiganan in the treatment of fungal infections. Unlike the conventionally used fluconazole, Omiganan is active against the highly resistant Candida biofilm structure. Biofilm-eradicating peptide concentrations are at most 3 rows higher than the corresponding MIC values.
Conclusions: Omiganan may be an alternative to conventional antifungal agents in the treatment of invasive fungal infections.

Keywords: Omiganan, AMP's, Candida

INVESTIGATION OF CPR KNOWLEDGE DEPENDENCE ON DRIVING EXPERIENCE AND PARTICIPATION IN FIRST AID TRAINING

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Introduction: The aim of this study was to investigate and evaluate car driver's knowledge of first aid according to driving experience and attendency of basic life support (BLS) courses.
Methods: 2081 participants answered identical, anonymous either online or paper form questionnaire, which consisted of 20 question based on The European Resuscitation Council Guidelines for Resuscitation 2015. Demographic information of participants was also collected. According to driving experience drivers were divided into four groups: 0 years, <2 years, 2-5 years, >5 years; based on driving experience participants were divided into four groups: did not attend any courses, attended driving school courses, attended other courses, attended both courses (organized by driving school and other courses).
Results: The age of studied car drivers ranged from 18 to 69 with median of 26 years. Drivers with no driving experience correctly responded to 8,2 of 20 (41%) questions asked; <2 years of experience – 11,6 of 20 (58%); 2-5 years – 12,3 of 20 (61,6%); >5 years – 12,4 of 20 (62,1%). It should be noted that respondents who attended only other courses scored higher number of right answers (correctly answered to 12,7 of 20 (63,5%)) compared to those who gained their knowledge during driving school lessons (11,0 of 20 (54,8%)).
Conclusions: This descriptive study demonstrates that drivers with longer driving experience have better first aid knowledge. Also, the study showed that compulsory courses organized by driving schools does not provide excellent first aid theoretical skills.

Keywords: Cardiopulmonary resuscitation, basic life support courses

GENERAL ANESTHESIA FROM PATIENTS PERSPECTIVE: WHAT MYTHS ARE MOST COMMON?

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Introduction: The aim of this study was to investigate and evaluate patients‘ knowledge about general anesthesia according to various demographic characteristics in order to understant what are the groups that require more detailed information before procedure.
Methods: 1209 participants answered identical anonymous online questionnaire, which consisted of 10 demographic questions and 6 questions testing knowledge of anesthesia.
Results: 786 (65%) women and 423 (35%) men participated in the study. Age median was 24 years [13; 75]. The majority of respondents indicated that they had undergone at least one operation in the past (696 (57.6%)), of which 602 (86.4%) had received general endotracheal anesthesia at least once. According to 314 (45.1%) respondents, chosen method of anesthesia and possible risk of anesthesia-related complications were not discussed. Analyzing study results on the knowledge of anesthesia, correct answers median was 4 [0; 6]. There was no statistically significant difference found evaluating number of correct answers depending on the experience of surgical treatment ($p = 0.1524$) and the informativeness of the preoperative visit ($p = 0.0767$). A weak direct relationship was found between the age of the respondents and the number of correct answers ($p = 0.00036$; $rho = 0.098$).
Conclusions: The study found that the level of knowledge about anesthesia has no direct relationship with various demographic indicators. There is not enough data to form criteria for identifying groups of patients requiring more detailed information, therefore preoperative oral premedication must be informative without distinguishing special groups.

Keywords: General anesthesia, myths

GASTROINTESTINAL BLEEDING OF INFANT

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Background: The causes of gastrointestinal bleeding vary with age. Diagnosis is difficult when bleeding occurs in patients who present characteristic symptoms on the border of the established definition of the age of a newborn and an infant. In addition, in newborns the digestive tract is so fast that upper gastrointestinal bleeding may manifest itself in the presence of fresh bood In the stool which further complicates the diagnosis.
Case Report: The boy was hospitalized twice at the age of 4 and 10 weeks, due to chronic gastrointestinal bleeding. On physical examination, persistent seborrheic dermatitis and recurrent rashes on face and trunk. Laboratory tests showed decreased values of the red blood cell system, coagulation system within normal limits and positive stool tests for occult blood. The performed tests excluded structural and infectious bleeding causes. Despite the strict hypoallergenic mothers diet with natural feeding, the persistent anemization resulted in double infusion of RCC. There was a change in nutrition to the artificial mixture Nutramigen puramino with great improvement. Seborrheic dermatitis and rash resolved. The child stopped bleeding, faecal occult blood test is negative and the anemia was gone.
Conclusions: In chronic gastrointestinal bleeding in pediatric patients it is worth considering the allergic cause. In newborns, laboratory diagnosis of food allergy is unreliable, therefore the diagnosis is based mainly on clinical symptoms. Breastfeeding has a lot of benefits and is therefore recommended by scientific societies. However, with severe food allergies, even a strict maternal diet is not enough and it is necessary to use an elemental mixture.

Keywords: Gastrointestinal bleeding, infant, allergy

AEROSOL AND DROPLET GENERATION DURING INTUBATION AND NORMAL BREATHING: A SIMULATION STUDY

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Introduction: Recent COVID-19 pandemic has made important changes to everyday practice of anaesthetists. Virus spreads via respiratory droplets and aerosolization according to current research. The aim of this study was to examine the extent of contact contamination, droplet spread and aerosolization that may occur with normal breathing and intubation in a mannequin study.
Methods: In the first experiment an AMBU bag was attached to the simulation mannequin's trachea and an atomiser device was placed into mannequin's pharynx. This model simulated normal ventilation as 0.5ml of luminescent fluid was sprayed through the atomiser. In the second experiment, the mannequin was intubated with a videolaryngoscope while spraying 0.5 mls of luminescent fluid through atomiser followed by removal of laryngoscope.The spread of luminescent aerosol cloud after 3 full breaths, droplet spread and contact contamination were visualised using ultraviolet light. The extent of spread was evaluated using a 4-point Likert scale (0 to 3) by two observers. Each of the experiments was repeated 5 times.
Results: For the first experiment, contact contamination, droplet spread and aerosol formation were 2.5 (2-3), 1 (0-1), 0 (0-1) points. For the second experiment, contact contamination, droplet spread and aerosol formation were 0,5 (0-1), 1 (0-1), 3 (2-3) points, accordingly.
Conclusions: Noticeable contact contamination occurs during laryngoscopy and removal of laryngoscope whereas droplet contamination with laryngoscopy and normal breathing is minimal. Normal breathing leads to significant aerosol formation.

Keywords: COVID-19, aerosolization, contact contamination, simulation study

COMPLETE DIGEORGE SYNDROME: A RARE TYPE OF A COMMON GENETIC DISORDER

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Background: DiGeorge Syndrome (DGS) is a syndrome caused by the deletion of q11.2 fragment on the 22 nd chromosome. It is one of the most common genetic disorders, it occurs 1 in every 4000 births. However, there is a subunit of patients (circa 1%) with a complete DiGeorge syndrome (cDGS), which characterizes with a complete aplasia of thymus and what it generates is a grave lack or an absence of CD3+ T lymphocytes.
Case Report: A 6-day old newborn was admitted to our Intensive Neonatal Care Unit. Facial abnormalities were noticed. An echocardiography has been performed on our patient. It confirmed the tetralogy of Fallot and other cardiac abnormalities. Additionally, our blood tests confirmed hypocalcemia with hypoparathyroidism. Aplasia of thymus was affirmed during the examination of lungs. Assessment of subsets and maturity of lymphocytes demonstrated a complete lack of CD3+ lymphocytes. Furthermore, the study showed lymphopenia, elevated granulocytes levels, raised percentage of NK and B cells. MLPA corroborated the deletion of 22q11.21.
Conclusions: Pathogenesis of the development of parathyroid glands and thymus is linked to impaired development of the III and IV pharyngeal pouches. The disturbance of the neural crest is also considered to contribute to the anomalies in DGS patients. The cause of so many cardiovascular defects is the mutation of TBX1 gene. 80% of patients with DGS have at least one such defect. Neonatal hypoparathyroidism resulting in hypocalcemia, with cardiological defects are highly diagnostic symptoms of DGS. What is exceptional in our patient is the complete lack of the thymus. cDGS presents with a state similar to SCID. Such patients are susceptible to opportunistic infections. Every case of untreated cDGS is fatal. The only highly effective treatment is the transplantation of the thymus. Successful recipients develop polyclonal CD3+ lymphocytes and an antigen specific immune response. Long-term survival rates reach up to 75%.

Keywords: Infant, DiGeorge syndrome, parathyroid glands, hypocalcemia, athymia, Tetralogy of Fallot

EVALUATION OF MECHANICAL POWER CAUSED BY DIFFERENT MECHANICAL LUNG VENTILATION METHODS

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Introduction: The aim of this study was to investigate and evaluate mechanical power (MP) caused by mechanical ventilation (MV) methods commonly used in clinical practice - volume (V-CMV), pressure (P-CMV) controlled and automatic ventilation techniques (Intellivent-ASV).
Methods: MV was performed using a 'Hamilton S1' device. Ventilation methods were applied in the following order: V-CMV -> P-CMV -> V-CMV -> P-CMV -> Intellivent-ASV. Normocapnia and normoxemia were maintained. Two different equations were used to calculate the MP caused by different ventilation methods.
Results: Our study included 11 patients with median age of 74 years [36, 82]. Mean values of monitored respiratory parameters were measured (V-CMV, P-CMV, Intellivent-ASV): Pmax (20.1 ± 3.1; 18.8 ± 2.6; 16.8 ± 3.8 cmH2O); PEEP (6.2 ± 1.4; 6.3 ± 1.4; 6.1 ± 1.3 cmH2O); ?P (13.8 ± 2.9; 12.5 ± 2.5; 10.7 ± 3.3 cmH2O); Ftotal (15.5 ± 3.8; 15.3 ± 3.5; 17.6 ± 2.5 rpm); Elrs (18.3 ± 6.0; 18.9 ± 5.4; 18.2 ± 6.8 l / cmH2O-1); PetCO2 (36.3 ± 2.8; 35.3 ± 2.6; 37.1 ± 2.3 mmHg); SpO2 (97.5 ± 1.3; 97.6 ± 1.3; 97.7 ± 1.3%). The average MP caused by different MV modes were determined: V-CMV (12.4 ± 4.4), P-CMV (15.4 ± 6.4), ASV (13.6 ± 6.0). Statistical methods did not show significant differences between the MP caused by different MV methods (p = 0.81).
Conclusions: Mechanical forces using V-CMV, P-CMV and Intellivent-ASV methods did not differ statistically significantly and can therefore be safely applied in clinical practice.

Keywords: Mechanical ventilation, mechanical power, ventilator-induced lung injury

THERMOREGULATION CHANGES IN PEDIATRIC PATIENTS 1-12 YEARS OLD UNDERGOING GENERAL ANESTHESIA IN RIGA CHILDREN'S CLINICAL UNIVERSITY HOSPITAL

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Introduction: Inadvertent perioperative hypothermia is defined as a core body temperature <36.0°C. It is a common consequence of anesthesia, which increases morbidity and potentially increases mortality. Many studies have reported significantly increased risks of surgical site infection, shivering or chills, blood loss and longer duration of surgery, and longer stays in the and hospital. This study aimed to determine the incidence of inadvertent intraoperative hypothermia and its risk factors.
Methods: The prospective study was conducted at the Riga Children's Clinical University Hospital. The research included pediatric patients 1-12 years old, undergoing elective surgery. Patients were randomized into two groups: active warming (group A), passive warming (group P). The core temperature was assumed to be that of esophagus temperature and axillary temperature. There were excluded patients with ASA ?III, infection, endocrine system diseases or fever. Data were analyses in the SPSS software program with independent test analysis. P-value less than 0,05 considered reliable.
Results: Study included 63 patients. N=31 (49%) group A, n=32 (51%) group P. The cumulative incidence rates of hypothermia (Tcore<36') within 30min, 61-90min, >90min, following induction of anesthesia were n=8 (25%), n=3 (9%), n=1 (3%) (Group P) respectively, n=0 (0%) (Group A). 12 (19%) of all patients were 35,5<=Tcore<36 (group P), 4(6%) 35<=Tcore<35,5 (group P).Comparison groups: Tmean core temp =36,504 vs T mean core temp =36,193 (p<0,001) Considering the duration of the anesthesia up to 55min, it was a significant difference ?Tcore (Group P) decreased rapidly than ?Tcore (Group A) (p<0,002). ?Tsurface (Group A) increased faster than ?Tsurface (Group P) (p<0,001).
Conclusions: The group N demonstrated an association between passive warming and lower Tcore, Tsurface then group S. Study have statistically significantly that ?Tsurface increased faster than ?Tcore . The results of this study documented that higher baseline core temperature reduced hypothermia risk and provide higher core temperature under anesthesia as well. Patients who were active warming with forced air warmers provide that they hadn't hypothermia.

Keywords: Anesthesia, thermoregulatory system, prewarming, hypothermia

CORTICAL VEIN THROMBOSIS AS A POSSIBLE CAUSE OF HEADACHE AFTER EPIDURAL ANESTHESIA: A CASE REPORT

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Background: Cortical vein thrombosis is a rare and serious complication of prolonged intracranial hypotension after epidural anesthesia. Most cases are related to predisposing factors, such as, pregnancy, malignancies, oral contraceptive use. Only few cases of postural headache due to cortical vein thrombosis after epidural anesthesia are described in the literature.
Case Report: A 36-year-old female was admitted to the Department of Neurology of Pauls Stradins Clinical University hospital with complaints of a strong headache that developed suddenly at night, while sleeping. A month before the patient received epidural anesthesia due to severe back pain. The next day the patient complained of a strong postural headache that was relieved by laying down. Due to the orthostatic headache the patient received blood patch treatment twice but the headache continued until the night of admission to the hospital when it suddenly changed its features - became more severe, was not relieved by supine position. MRI revealed cortical vein thrombosis in the right parietal lobe, precentral gyrus. Anticoagulant therapy with rivaroxaban was initiated after which the headache reduced. The therapy was continued for 6 months after the patient was discharged. The severity of the headache was reduced significantly.
Conclusions: This case shows an example of cortical vein thrombosis as a complication of intracranial hypotension due to epidural anesthesia. Diagnosis was based on clinical manifestation and MRI findings. Cortical vein thrombosis should be considered in all patients who have prolonged orthostatic headache that suddenly changes its features. Early diagnosis is significant for a fast pain management and recovery.

Keywords: cortical, vein, thrombosis, epidural, anesthesia, headache, hypotension

SEPSIS OR INBORN COAGULATION DISORDERS? - CONGENITAL PROTEIN C DEFICIENCY

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Background: Congenital protein C (PC) deficiency is a rare condition that poses a higher risk of venous thromboembolisms. Patients with a mild form of the disorder may be asymptomatic, however they are susceptible to venous thrombosis at any moment throughout their lifetime.
Case Report: A newborn preterm female was administered to the neonatal pathology ward with progressive symptoms of respiratory failure. On admission she presented with transient tachypnea of the newborn and grunting. The next day the patient's condition suddenly deteriorated (dyspnea, perfusion disorders, motor activity reduction, emesis and reluctance to suck). Laboratory testing revealed: increased procalcitonin level – 34.1 ng/mL (normal range <0.5 ng/mL), elevated D-dimer concentration – 4.28 mg/L (normal range <0.55 mg/L), decreased AT III activity level – 38% (normally above 50%) and significantly decreased plasma PC activity level – 8% (normally above 25%). Antibiotic treatment was administered. Negative results of blood cultures, reduction of inflammatory parameters and increase in AT III level were obtained, however the serum level of PC activity remained low. PC level measured in the patient's mother was also below the normal range. The diagnosis of congenital PC deficiency was established. The patient was discharged from the hospital in a good general condition, with plasma PC activity level of 16%, and special recommendations.
Conclusions: Congenital PC deficiency might not give characteristic symptoms immediately after birth. It is imperative to remember that during the very first days of patient's life the clinical sepsis can contribute to the much decreased PC activity level (in addition to the pre-existing inborn deficiency).

Keywords: protein C, congenital deficiency, thromboembolism, neonatology

Basic Sciences and Experimental Medicine

IMMUNOHISTOCHEMICAL ASPECTS OF MEDULLARY BREAST CARCINOMA

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Introduction: Breast cancer ranks first among malignant tumors in women. It is characterized by pronounced variability of morphological and molecular-genetic features, which are reflected in the course of the disease. Medullary carcinoma is one of the most common variants of breast cancer, occupying 2-7%. This tumor has pronounced cellular atypia. Nevertheless, the course of the disease is favorable. Our aims to study the immunohistochemical properties of medullary breast carcinoma tissue.
Methods: The study was conducted on 20 samples of typical medullary breast carcinoma. The tissues' immunological profile was studied by immunohistochemical research of receptors for estrogen, progesterone, HER-2/neu, p53, Ki-67, E-cadherin, MMP1, bcl-2, and VEGF. Processing of the results was made by applied statistical methods.
Results: The tissue of medullary breast carcinoma is characterized by a lack of estrogen, progesterone, and HER-2/neu receptors' expression. Tumor cells have a pronounced proliferative activity (overexpression of Ki-67) and antiapoptotic potential (pronounced expression of p53 and bcl-2). All cells have E-cadherin expression and almost no expression of MMP1 and VEGF.
Conclusions: Unique immunohistochemical features characterize medullary breast carcinoma – lack of estrogen, progesterone, HER-2/neu receptors' expression, and overexpression of p53, bcl-2, Ki-67. Given this prognostically unfavorable indicators list of tumor progression (except for HER-2/neu), medullary carcinoma is a non-metastatic tumor. It may be caused by pronounced adhesive properties of cancer cells (E-cadherin expression) and the absence of prometastatic proteins (MMP1 and VEGF).

Keywords: medullary breast carcinoma, immunohistochemical aspects, receptors status

COMPARATIVE STUDY OF THE ANTIBACTERIAL ACTIVITY OF GARCINIA MANGOSTANA L. AND SOME ANTIBIOTICS

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Introduction: Currently, in the treatment of infectious diseases caused by Staphylococcus aureus, an increasing problem is the acquisition of resistance by microorganisms to the antibacterial agents used. A significant disadvantage of the antibiotics used is the presence of a number of pronounced side effects. Herbal remedies have a milder effect and less pronounced side effects, which makes the search for modern antibacterial herbal preparations urgent.One of these means is the extraction of Garcinia mangostana L. from the fruits, the antibacterial activity of which is due to a group of native xanthones.
Methods: The object of the study was an extract of Garcinia mangostana L. containing xanthones from the fruit. As comparison drugs were used: Tetracycline, Amoxicillin, Erythromycin. When studying the antibacterial activity, we used the method of cultivating microorganisms on nutrient agar, sowing with strokes. Microbial load: 1000 cells / ml. Test samples dose: 1 ?g / ml. Test culture: Staphylococcus aureus (B-8171) In parallel, a control inoculation of microbial suspension (control) was performed.
Results: As a result of the study, the highest antibacterial activity against St. aureus showed the extraction of Garcinia mangostana L. and tetracycline. In these groups, the growth of the test culture was not observed. In the Erythromycin group, a weak antibacterial activity was noted - the number of colonies of St. aureus was 106. Amoxicillin showed no activity against St. aureus - the number of colonies of microorganisms coincided with their number in the control (5 × 106).
Conclusions: Thus, on the basis of the studies carried out, it has been established that the extract from the fruits of Garcinia mangostana L., containing xanthones, has high antibacterial activity against St. aureus and by the severity of the action is commensurate with the action of Tetracycline.

Keywords: Garcinia mangostana L., Tetracycline, Amoxicillin, Erythromycin, Staphylococcus aureus, antibacterial activity.

EVALUATING MEDICAL STUDENT'S ADAPTATION IN THE UNIVERSITY AND NON-DRUGS PROGRAM FOR CORRECTING STRESS REACTIVITY AND DISADAPTATION

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Introduction: A wide range of programs for correcting high levels of stress reactivity among medical students is currently being developed. However, a number of aspects of adaptation assessing and ways of correcting excessive stress remain unclear.
Methods: 46 girls and 44 boys of the Medical University answered questions of S. Cowhen's, G. Williansson's t and Ch. D. Spielberger's, L. Khanin's tests. Statistical data processing was performed using Microsoft Excel 2010 program.
Results: All students were divided into 4 groups. The criteria were: the personal anxiety level (PA), situational anxiety level (SA), number of iris adaptation rings (AR), the average level of blood pressure (BP) (at rest and after math's test), self-assessment of stress resistance (SASR). As a result of the study, the following changes are observed in groups: - Group I: SA, AR and BP decreased but the PA - increased. Student's SASR has positive changes. - Group II: SA, PA, AR and BP decreased. Student's SASR is satisfactory. - Group III: SA, PA, AR and BP decreased. Student's SASR has positive changes. - Group IV: SA, PA, AR and BP decreased. Student's SASR has positive changes.
Conclusions: We have tested an assessment option for dividing into groups according to adaptation level, and also tested a program for individual correction of stress reactivity. Objectively, the subjects showed improvement in all indicators. Subjectively, the students noted that they began to feel more confident in the university.

Keywords: anxiety, blood pressure, disadaptation, iris, medical education, stress

PHASE CONTENTS OF THE BIOMINERAL OF THE PELVIC BONES WITH STREPTOZOTOCIN-INDUCED DIABETES IN ADULT RATS

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Introduction: Type 1 diabetes belongs to common risk factors for bone healing and repeated fractures. Patients with diabetes experience impaired bone minerals turnover; however, detailed studies of the bone mineral composition under these conditions are absent.
Methods: The experiment involved 70 3-month old rats. All animals were divided into 2 groups: the 1st group – the controls, the 2nd group – animals with diabetes caused by intraperitoneal injection of streptozotocin. Ultrastructure of the bone mineral was tested by X-ray diffraction analysis.
Results: In the 1st group, the share of hydroxyapatite in the bone mineral increased while the shares of calcite and whitlockite on the contrary decreased, which testifies for continuing crystallization of bone mineral in the controls. In the 2nd group, the content of hydroxyapatite decreased: from the 7th to the 90th day of the experiment, it was less than the values of the controls by 2.61%, 4.51%, 5.13%, 4.96%, and 4.75%. The content of amorphous components increased, and from the 7th to the 90th day of the experiment, the calcite content was higher than that of the controls by 4.72%, 6.61%, 7.45%, 8.55% and 6.77% and the content of whitlockite - by 7.44%, 14.26%, 16.46%, 14.98% and 13.33%, respectively.
Conclusions: Streptozotocin-induced diabetes in rats results in instability pf mineral contents in bone, which can affect remodeling processes.

Keywords: Diabetes,fractures,ultrastructure,bone mineral

MEMBRANE ADATATION OF BIFIDOBACTERIUM IN EXOMETABOLITES OF CANDIDA ALBICANS

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Introduction: The mechanisms of adaptation of normal microbiota to action of various exoenzymes of opportunistic bacteria and fungi are studied insufficiently. Objective: To study the mechanisms of regulating the fluidity of the membrane of bifidobacteria under the influence of exometabolites of Candida albicans.
Methods: The objects of research were Bifidobacterium breve strains: probiotic and isolated ones from the intestine of the child. To receive the exometabolites of micromycetes a clinical strain of C.albicans was cultivated on the liquid nutrient medium No2 GRM Saburo (Obolensk). The fatty acid composition of phospholipids was studied by gas-liquid chromatography.
Results: In the structure of fatty acids in fecal B. breve isolate unsaturated fatty acids were dominant 58.9% (oleic (18:1; 39.6%), palmitic (16:0; 26.6%), linoleic (18:2; 14.4%) acids), and in probiotic strain saturated fatty acids 82.4% (palmitic (16:0; 37.5%), stearic (18:0; 33.3%) acids). After the C.albicans exometabolites influence the gravity of saturated fatty acids in fecal isolate increased up to 90.3 % and the diversity of fatty acids decreased ($x^2=104.08$, df=21, p=0.0003). In the probiotic strain the structure of fatty acids did not change ($x^2=81.2$, df=18, p=0.8).
Conclusions: In B. breve of an intestinal origin with the influence of exometabolites of C.albicans the regulation of fluidity of a membrane is carried out by changing the ratio fatty acids, stopping the synthesis of fatty acids with a long acyl chain ($x^2=104.08$, df=21, p=0.0003); and in the probiotic strain composition of fatty acids did not change significantly ($x^2=81.2$, df=18, p=0.8), which indicates low adaptive ability for survival in the intestine.

Keywords: microbiota, Candida albicans, membrane adatation, Bifidobacterium breve, fatty acids

CAN BEE POLLEN OR WHEY PROTEIN SUPPLEMENTATION AFFECT MICROARCHITECTURE OF STOMACH? – PRELIMINARY RESULTS

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Introduction: Bee pollen is a popular diet supplement. Many studies suggest its anti-inflammatory, cytoprotective, antioxidative, antibacterial and hepatoprotective effects. Bee pollen gastroprotective effects have been suggested, but the topic is not yet well-researched. Some studies suggest that aging may me associated with the width of gastric mucosa and the increasing incidence of peptic ulcer may be related with thicker gastric folds.
Methods: 30 male Wistar rats were divided into 6 equal groups – 3 running and 3 non-running – among them there was one control, one supplemented with bee pollen and one receiving whey proteins. After 8 weeks of laboratory phase all animals were decapitated and their stomachs were collected, formalin-fixed and paraffin-embedded. 5 ?m thick slides were prepared. Slides were stained with hematoxylin and eosin. When viewed under the microscope, photos of the slides were taken. Images were used for histological measurements of mucous membrane and Statistica 13 to perform statistical analysis.
Results: The basic hematoxylin and eosin staining shows differences in the histological appearance of stomach. Study shows that mucosa is significantly thicker in running groups. In the non-running groups the width of mucosa is highest in group supplemented with bee pollen.
Conclusions: Our study suggests that bee pollen consumption may have a gastroprotective effect for affecting width of gastric mucosa. Further studies should explore the topic with particular emphasis on discovering the possible mechanism.

Keywords: bee pollen, stomach, mucosa, gastroprotective, microarchitecture

LABORATORY SUSCEPTIBILITY TESTING OF CANDIDA SPP. TO FLUCONAZOLE – CURRENT CHALLENGE OF MICROBIOLOGICAL DIAGNOSTICS

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Introduction: Candida spp. cause multiple infections - affecting not only the skin and mucosa, but also systemic infections with a mortality rate of 40%. Despite common usage of fluconazole in treating the above infections, susceptibility testing of Candida remains problematic. Although it has been confirmed that following the recommendations of both CLSI and EUCAST offers similar results, discretion and modifications are not uncommon. Aim of the study The aim of the study was to compare fluconazole susceptibility testing methods.
Methods: The research was based on 4 referential Candida strains and 24 strains isolated from patients. MICs were obtained in accordance with CLSI and EUCAST standards. The comparison included the use of flat-bottomed microdilution plates versus U-bottomed ones, as well as obtaining data visually and spectrofotometrically after 24 and 48 hours.
Results: The study has proved that treating fluconazole as a fungicide leads to inflation of results, where sensitive strains are classified as resistant. Likewise, the use of U-bottomed microdilution plates results in obtaining higher MICs than when flat-bottomed plates are used. No significant differences were observed among MICs collected after 24- and 48-hour incubation while using flat-bottomed plates, unlike using U-bottomed ones.
Conclusions: The differences in the collected MICs of fluconazole depending on the applied method and its modifications call for the development of consistent standards. The application of different laboratory methods leads to classifying the strains as susceptible and resistant, which has an enormous impact on the choice of treatment and ultimately the therapeutic success.

Keywords: Candida, fluconazole, EUCAST, CLSI

THE UTILITY OF 8-ISOPROSTANE AS AN EARLY MARKER OF NEOPLASTIC PROCESS DEVELOPMENT

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Introduction: Colorectal cancer takes the 3rd place among all neoplastic lesions. That's why new, reliable, and affordable methods of early diagnostic are needed. There is a direct evidence showing a strong connection between cancer and free-radical oxidation. Recently, 8-isoprostane has been regarded as the most valuable and reliable marker of oxidative stress in vivo and their quantification is recommended for assessing oxidant injuries.
Methods: Material and methods. Research was conducted on 168 mature outbred white male rats: 84 control animals, 84 animals with modeled colorectal adenocarcinoma in situ. Rets were kept in standard vivarium conditions. Neoplastic injury was modeled by subcutaneous injection of 1,1-dimethylhydrazine dihydrochloride (DMH) (7.2 mg/kg of body weight) once a week for 7 months. Blood samples were collected every 30 days.
Results: It was established that the level of 8-isoprostanes increased significantly, comparing to the control group, during all terms of the experiment: 1st month – by 37.8 %, 2nd month – by 49.4 %, 3rd month – in 2.2 times, 4th month – in 5.2 times, 5th month – in 6.6 times, 6th month – in 7.9 times, 7th month – in 9.3 times.
Conclusions: Our investigation proves that evaluation of the 8-isoprostane level is a trustworthy marker of carcinogenesis development caused by oxidative stress progression.

Keywords: colorectal cancer, oxidative stress, 8-isoprostanes

THE INFLUENCE OF THE SILVER NANOPARTICLES MADE IN CHITOSAN AREA ON MMP-9 IN EXPERIMENTAL MODELS OF CHRONIC BRONCHITIS

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Introduction: According to the World Health Organization in 2017, chronic respiratory diseases (CRDs) are one of the major challenges to global public health. One-sixth of all common deaths from CRD have been linked to chronic obstructive pulmonary diseases (COPD). The use of nanoparticles in the last decade has gained widespread recognition in biology and medicine. Among them, silver nanoparticles (AgNPs) have a special place due to their unique properties.
Methods: The aim of the study is to detect the influence of silver nanoparticles made in chitosan area on MMP-9 in experimental models of chronic bronchitis. To reach this, we set a several tasks. In research, we are using an innovative method of treatment, which is relatively new in practice. During the experiment, we created a silver nanoparticle and a chitosan Nano compound by "Green Technology".
Results: An effective compound, which was developed by us, had a positive effect on experimental rats in the treatment of chronic bronchitis.
Conclusions: We believe that the antioxidant properties of silver nanoparticles and chitosan will reduce the negative effects of metalloproteinases on lung tissue, which will prevent the risk of developing chronic bronchitis. This will make it possible to effectively manage the complications of CBD, reduce mortality and improve treatment costs as well as improve quality of life and ability to work. this study has not been completed, at this stage it is in process at Natishvili Morphology Institute, equipped with a biochemistry laboratory. The final results are being analyzed at this time.

Keywords: Nanoparticles, Silver Nanoparticle(AgNPs), Chitosan, Green Technology, Nano Compound, Chronic Bronchitis, COPD,MMP-9

TEMS PERCENTAGE IN CHRONIC LYMPHOCYTIC LEUKEMIA PATIENTS (CLL)

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Introduction: Tie2-expressing monocytes (TEMs) are associated with tumor progression and metastasis. This unique subset of monocytes has been identified as a potential prognostic marker in several solid tumors. However, TEMs remain poorly characterized in hematological cancers including chronic lymphocytic leukemia (CLL). The aim of our study was to examine the role of TEMs in the pathogenesis and clinical course of CLL.
Methods: Flow cytometry analysis of TEMs (defined as CD14+CD16+Tie2+ cells) was performed at the time of diagnosis on peripheral blood mononuclear cells (PBMCs) from 40 CLL patients. The percentage of CD14+CD16+Tie2+ cell population was expressed as the percentage of CD14+CD16+ monocytes.
Results: We showed higher percentages of TEMs in peripheral blood of CLL patients than in healthy controls. The percentage of TEMs increased with the disease stage. In the current study, a high percentage of TEMs associated closely with unfavorable prognostic markers (ZAP-70, CD38).
Conclusions: In conclusion, our results suggest that high TEMs percentage is associated with poor prognosis in patients with CLL. The study suggests that CD14+CD16+Tie2+ monocytes may be helpful in determining disease progression.

Keywords: TEMs, CLL, chronic lymphocytic leukemia, immunology

ANTIOXIDANT PROPERTIES OF AEGOPODIUM PODAGRARIA L. EXTRACTS BY DPPH-RP-HPLC-DAD

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Introduction: Goutweed (Aegopodium podagraria L.) is a plant of Apiaceae family. Due to its hypouricemic action and the suppressing inflammation, goutweed was established as a herbal drug to treat gout in folk medicine. So far, anti-inflammatory, antimicrobial, nephro- and hepatoprotective properties and anti-cancerogenic activities have been confirmed. Because of the role of oxidative stress has been confirmed in the pathogenesis of many diseases, this work concerns the determination of the total antioxidant capacity of A. podagraria extracts.
Methods: An HPLC method was used to measurement of the DPPH-R (2,2-diphenyl-1-picrylhydrazyl radical)/DPPH-H (2,2-diphenyl-1-picrylhydrazine). The method was tested on all extracts prepared from dry and fresh plants as well as standard antioxidants (AOs) i.e. reduced glutathione (GSH), ascorbic acid (vitamin C). The DPPH radical scavenging capacity was measured after 15 min. reaction time at 517 nm.
Results: The DPPH-R /DPPH-H was separated (Rs = 2.30, ? = 1.65). The EC50 parameter was used to measure the antioxidant activity of the extracts and standard AOs. The evaluated extracts displayed high antioxidant activity, higher than 20 % inhibition of the free radicals. The results show that the ethanol extracts of A. podagraria L. prepared from dry plant exhibits the highest antioxidant potential (EC50 = 64.74±0.22 µL/mL).
Conclusions: The results of the study allow classifying A. podagraria extracts as the strong antioxidant agents in comparison with common antioxidants.

Keywords: Aegopodium podagraria L.; Antioxidant activity; DPPH, RP-HPLC.

IN SILICO STUDY ON NEW UREA DERIVATIVE AS A VEGFR 1 AND 2 INHIBITOR

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Introduction: Tyrosine kinase receptors are involved in the control of cell growth and division, and therefore are an important target of the action of anti-cancer drugs. One of them is the receptor for vascular endothelial growth factor (VEGFR), which plays an important role in angiogenesis. VEGFR inhibitors slow down the spread of cancer cells by blocking the production of new blood vessels. The drug development process is very time-consuming and expensive, therefore virtual screening methods are used to exclude compounds already at the structure optimization stage. The most popular method of searching for new compounds with potential biological activity is Virtual Screening (VS). VS can be divided into Ligand-Base Drug Design (LBDD) and Structure-Base Drug Design (SBDD). The aim of our team's research was to design, obtain and characterize a new potential VEGFR 1 and 2 inhibitor using computer chemistry methods.
Methods: Using computer chemistry methods, the predicted biological activity of the compounds was tested, the necessary syntheses were made, the ligand-receptor interactions and the pharmacokinetic parameters of a given compound were determined.
Results: A urea derivative was obtained which is a potential VEGFR 1 and 2 inhibitor.
Conclusions: Although computer chemistry methods accelerate the process of discovering new molecules with potential biological activity, further research is needed to verification obtained data.

Keywords: VEGFR, kinase inhibitor, virtual screening, molecular modelling

INTERSTITIAL CELLS POPULATIONS AND THEIR CHANGES IN BIOLOGICALLY TREATED DSS-INDUCED COLITIS.

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Introduction: Dextran sodium sulfate (DSS)-induced colitis is a mouse model of ulcerative colitis (UC). The interstitial cells: neurons, interstitial cells of Cajal (ICC) and telocytes are promising direction in research on UC pathogenesis, due to their possible involvement in tissue repair or immune regulation. Unfortunately, there is no available data on interstitial cells in the mouse colon. The aim was to assess the neurons, ICC and telocytes populations in controls and inflamed (DSS) mouse colon mucosa with further evaluation of infliximab (IFX) treatment impact on these populations.
Methods: We divided 30 male Balb/C mice into control and two DSS groups treated with saline or IFX. The DSS groups underwent a 7-day model with 3% DSS drinking solution (days 0-4). The IFX was administered intravenously on day 3 (5mg/kg). On day 7, mice were sacrificed to evaluate inflammation score and perform immunohistochemical examination. The neurons were identified as PGP9.5-positive, ICC as c-kit-positive and telocytes as CD34/PDGFRalpha-double-positive cells.
Results: DSS groups had significantly higher inflammation score than control. The IFX group had lower score than DSS-saline, on the border of statistical significance. We observed different cells' distribution and morphology between the groups. DSS-saline group had significantly increased neurons' population, while the ICC had tendency to decrease comparing to control. Comparing to untreated DSS group, IFX caused significant decrease in neurons' and ICC populations, whereas telocytes increased.
Conclusions: Inflammation impacts interstitial cells populations. We suggest occurrence of compensation ladder with primary loss of ICC with subsequent changes in neurons and telocytes populations.

Keywords: Ulcerative colitis. Interstitial cells. Infliximab.

GARLIC'S ANTICANCER PROPERTIES ON SH-SY5Y CELL LINE

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Introduction: The overal incidence of cancer is increasing in recent years. Despite development of medicine and employing new treatments, viability of patients with cancer is still very low. Numerous pharmacological studies have confirmed antitumor activities in many herbal medicines. Garlic was investigated as active natural medicine with antioxidation and anticancer properties.
Methods: The current investigation is mainly focused on differences between two kinds of garlic: fresh egyptian and granulated. Extracts was made in water and 50% ethanol solution. Their anticancer properties were examined on neuroblastoma cell line (SH-SY5Y) in different range of hours.
Results: Viability of cells was observed decreased. Some differences of garlic's kinds was either observed in different range of hours, kind of solution and concentration of extract.
Conclusions: Garlic extract shows anticancer activity in neuroblastoma cell line. Thus it is potential natural medicine, which can be used in either targeted and normal cancer therapy, but it is still to need investigate garlic's anticancer activity on different cell lines and it's side effect.

Keywords: garlic, cancer, anticancer properties, herb

Cardiac Surgery and Thoracic Surgery

EFFECT OF BRANCHED ENDOVASCULAR AORTIC REPAIR ON PLATELET REACTIVITY IN PATIENTS WITH THORACO-ABDOMINAL AORTIC ANEURYSM

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Introduction: Endovascular aortic repair (EVAR) is a modern treatment option in aortic aneurysm repair. The presence of the graft may be associated with increased risk of thrombosis, whereas double antiplatelet therapy (aspirin and clopidogrel) may increase the risk of bleeding. We aimed to assess the effect of branched EVAR on platelet reactivity in patients with thoraco-abdominal aortic aneurysm.
Methods: The study population comprised of 25 patients undergoing elective or emergency branched EVAR of thoraco-abdominal aortic aneurysm (mean age 68.9±4.4 years, 64% male). Blood samples were collected 3 times: before the operation, within 24 hours after the operation and at discharge. Platelet reactivity was assessed using impedance aggregometry. Clinical data regarding thrombotic and bleeding events were extracted from the hospital database.
Results: There was a stepwise decrease in platelet reactivity after the operation, compared to baseline ($p<0.0001$) with the lowest platelet reactivity at discharge. There were no thrombotic events until discharge. After the operation, 11 patients required RBC concentrate transfusion. At admission, there was a negative correlation between platelets reactivity ($r<-0.5$, $p<0.02$) and post-operative decrease in haemoglobin ($r<-0.15$, $p<0.51$), and the amount of RBC units transfused after the operation. No other platelet-related parameters correlated with number of RBC units transfused.
Conclusions: Platelet reactivity decreases after branched EVAR of thoraco-abdominal aortic aneurysm. Lower platelet reactivity at admission is associated with higher amount of RBC units transfused after the operation. If platelet reactivity may be used as a biomarker to predict post-operative bleeding after the surgery, remains to be established.

Keywords: aortic aneurysm, EVAR, platelet reactivity, bleeding

ACUTE PULMONARY EMBOLISM BY AMNIOTIC FLUID – A RARE COMPLICATION OF PERINATAL PERIOD WHICH SHOULD NOT BE FORGOTTEN. CASE REPORT.

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Background: Amniotic fluid embolism (AFE) is a type of pulmonary embolism that occurs when amniotic fluid enters the maternal circulation during delivery or postpartum. The main symptoms are dyspnoea, cardiovascular collapse, disseminated intravascular coagulation, and even sudden cardiac death. The AFE can be confirmed only by excluding other diagnoses.
Case Report: A case of 28-year old woman was admitted to obstetric ward during first stage of labour. She was at 37+5 weeks of gestation in the first and uncomplicated pregnancy. Due to a rapid deterioration of maternal condition with acute respiratory distress symptoms, an emergency caesarean delivery was performed. A foetus was born in critical condition having a low Apgar score. Disseminated intravascular coagulation with elevated D-dimer (6300 ?g/l), low fibrinogen (<50 mg/dl) and thrombocytopenia (67 × 10^9/l) was also occurred. The next day the patient was referred to the cardiac invasive care unit with acute pulmonary embolism suspected. An echocardiography revealed signs of right heart chambers overload due to acute pulmonary hypertension (RVSP 37 mmHg). However, CT angiography did not revealed thrombi in any pulmonary artery. The rapid administration of intravenous (IV) fluids and proper oxygenation were provided. She also received the IV bolus of unfractionated heparin and blood components transfusion. The patient was discharged after stabilization of medical condition and referred back to obstetric ward.
Conclusions: The AFE is largely unpredictable, unpreventable and typically catastrophic complication of pregnancy. It is important to recognize the clinical characteristics of AFE summarily. An immediate multidisciplinary response is essential to optimize patient outcome and minimize mortality.

Keywords: amniotic fluid embolism, DIC, pregnancy complication

FEATURES OF THE ACUTE PERIOD OF MYOCARDIAL INFARCTION WITH ST ELEVATION IN PATIENTS AFTER RESTORING CORONARY BLOOD FLOW

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Introduction: The aim of the study is to establish the clinical features of the acute period of STEMI in patients after restoring of coronary blood flow.
Methods: 100 patients with STEMI in the acute period were examined. They were divided into 3 groups: 1st (n = 46) – after primary percutaneous coronary intervention (PCI), 2nd (n = 33) – after thrombolytic therapy (TLT), 3rd (n = 21) – patients with standard drug therapy.
Results: In patients of group 1, compared with group 3, the LV end-systolic diameter was significantly lower by 5.73% (p = 0.0471) as well as the LV myocardial mass index by 10.06% (p = 0.0076). Among patients of the 1st group, compared with the 2nd group, significantly less often were determined pulmonary hypertension – by 17.72% (p = 0.028), the formation of hypokinesis zones by 26.15% (p = 0.0293) and LV systolic dysfunction by 1.99% (p = 0.0135), and compared with group 3 less often the formation of LV dyskinesia zones by 19.46% (p = 0.027). Acute LV failure in group 2 occurred less frequently compared with groups 1 and 3 (by 24.34%, p = 0.0067 and 7.7%, p = 0.0049).
Conclusions: In patients after PCI there were better intracardiac hemodynamics, less pulmonary hypertension and systolic dysfunction. Reperfusion syndrome in the PCI group was more often manifested like acute LV failure, in contrast to the group with TLT, where extrasystolic arrhythmia occurs more often. LV aneurysm is more likely to occur in patients who have not received reperfusion therapy.

Keywords: ST-elevation myocardial infarction, STEMI, percutaneous coronary intervention, thrombolytic therapy

THE EMERGENCY PROCEDURE OF RUPTURED ACUTE THORACO-ABDOMINAL AORTIC DISSECTION

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Background: The aetiology of aortic dissection and aortic aneurysm is different. In the acute type B aortic dissection (TBAD) blood flow tears the intimal arterial, whereas the aortic aneurysm is caused by elastic fibres degeneration resulting in dilatation of the aorta and may cause its rupture. The coincidence of abdominal aortic aneurysm (AAA) and TBAD is rather rare and complicates the treatment.
Case Report: A 62-year-old man was admitted to the hospital because of acute TBAD and AAA. The patient presented clinical and tomographical signs of AAA rupture. The maximal diameter of AAA was 78 mm. Its wall was dissected and ruptured to the retroperitoneal space resulting in haematoma. The superior mesenteric artery and right renal artery originated from the true lumen, while the coeliac trunk and left renal artery (LRA) from the false lumen. The patient was operated in hypovolemic shock. The primary and secondary entries were covered by Zenith Dissection stentgrafts, which did not stop the retroperitoneal bleeding. Subtraction angiography proved tears in the coeliac trunk and dissected LRA. The tear in the true lumen was connected with LRA by a covered stent. A bifurcated stentgraft was implanted below the renal arteries. Simultaneous ballooning of stents in suprarenal aorta and LRA caused membrane fenestration and exclusion of the ruptured aneurysm. The patient recovered and has been followed in outpatient department.
Conclusions: Acute TBAD in patients with AAA causes a high risk of a rupture. Both pathologies require simultaneous treatment. Membrane fenestration in the suprarenal aorta can be useful for complete AAA exclusion.

Keywords: abdominal aortic aneurysm, acute type B aortic dissection, membrane fenestration

JUNCTIONAL RHYTHM AS A MANIFESTATION OF MYOCARDIAL INFARCTION

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Background: The electrocardiogram is one of the fastest tests in the diagnosis of myocardial infarction. Beyond the typical changes, myocardial ischemia can cause less specific abnormalities in the ECG.
Case Report: 78-year-old woman without a significant history of chronic disease was admitted to the local hospital with chest pain and nausea. At admission the ECG revealed atrial fibrillation. During observation, the previously reported pain subsided, and repeated ECG showed a junctional rhythm with a frequency of 45 bpm. Blood tests revealed significant cardiac biomarkers elevation consistent with myocardial ischemia. The patient was referred to the Institute of Cardiology in Warsaw for further treatment. Upon admission, the patient reported nausea and dyspnea. In ECG monitoring a junctional rhythm with a frequency of about 50 bpm and episodes of atrial fibrillation was observed. In transthoracic echocardiography hypokinesis of the basal segments of the lower, posterior and lateral wall was found. Blood tests confirmed further elevation of cardiac biomarkers. Coronary artery angiography showed an occlusion of the left circumflex artery. The artery was revascularized with a good angiographic result. Due to narrow vessel size stent implantation was abandoned. Medical treatment with UFH, ticagrelol and atropine was administered. After the intervention, a conversion of junctional rhythm to sinus rhythm was observed. Hospitalization proceeded without complications and on the 5th day the patient was discharged from hospital.
Conclusions: Although, the ECG is one of the crucial parts of myocardial infarction diagnosis, the physical examination, echocardiography, blood tests and patient's history remain the complementary part of diagnosis.

Keywords: junctional rhythm, myocardial infarction, acute coronary syndrome, ECG, electrocardiogram, angioplasty

DIFFICULTS OF DIAGNOSTICS THYROID PATHOLOGY THAT COMBINED WITH AUTOIMMUNE THYROIDITIS

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Introduction: Recent studies have shown that autoimmune thyroiditis complicate the diagnostic of thyroid pathology.
Methods: A retrospective analysis of 133 case histories of patients who received treatment in the surgical department of “VIZUS” LLC from January 2018 to December 2019 was performed. The mean age of the patients was 53.1 ± 10.4 years. All patients were divided into different groups. Patients who has combination autoimmune thyroiditis were include into the first group - 49 (36.8 %). Patients who has only one pathology of thyroid were include into the second group - 84 (63.2 %). All patients underwent surgical treatment.
Results: Autoimmune thyroiditis was combined with nodular goiter in 12 cases (24.5 %), follicular adenoma in 4 cases (8.2 %), papillary cancer of thyroid in 33 cases (67.3 %). The 31 patients (36.9 %) of the second group have diagnosis follicular adenoma, thyroid nodular goiter 23 (27.4 %), papillary cancer of thyroid 30 (35.7%). As a result of the cytological examination of thyroid nodular punctures, atypical results that have undetermined significance was detected in 14 cases (28.6 %) of patient of the first group and 3 patients (3.6 %) of the second group have the same results, p = 0,0165. The follicular neoplasia was detected in 18 (36.7 %) patients from the first group and in 5 (5.9 %) of the second group, p = 0,0032.
Conclusions: Changes in thyroid parenchyma inherent in autoimmune thyroiditis laed to raising undetermineted results of the cytological examination.

Keywords: autoimmune thyroiditis, thyroid pathology, cytological examination of thyroid nodular punctures

UNUSUAL CASE OF THE BATTERED CHILD SYNDROME

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Background: The battered child syndrome is a form of child abuse and has a high life threatening risk. Most victims are younger than 2 years of age children. As a special type of this syndrome, a penetrating abdomino-thoracic trauma in 22-month-old female is presented.
Case Report: The patient was admitted to pediatric emergency ward with numerous knife wounds after being attacked by the mother's partner. At the incident site, right open pneumothorax and wound dehiscence were identified. She was shifted to the operating room immediately. The content of gastrointestinal tract was identified in respiratory tract. Additionaly, lung auscultation revealed the lack of alveolar murmur on the left side. The drain was inserted into both pleural cavities. The numerous stab wounds were identified in diaphragm, spleen, pancreas, liver, duodenum and intestinum and then were subsequently treated. After several hours of urgent surgical treatment of extensive multiple organ trauma, the child in severe condition was transferred up to ICU. After 10 days she was extubated but the chest X-ray revealed total atelectasis of the left lung. The bronchoscopy was done. On day 14 the rehabilitation was started, a decrease in muscle strength in the left lower limb was observed. The MRI revealed damage of lumbosacral dural sac. Rehabilitation treatments were implemented. After 36 days she was discharged in overall good condition for further outpatient rehabilitation.
Conclusions: Penetrating abdomino-thoracic injuries demand immediate surgical intervention and long postoperative care. The result of treatment depends on extent of wounds and patient’s general condition.

Keywords: battered child syndrome, child abuse, penetrating abdomino-thoracic trauma

IMPORTANCE AND OUTCOMES OF LUNG TRANSPLANTATION IN CF PATIENTS

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Background: Background: Cystic fibrosis (CF) is a disorder, caused by mutations of CFTR gene, affecting mostly lungs and digestive tract. This case shows the importance of lung transplantation in CF patients as well as the consequences it bears.
Case Report: Case description: 27-year-old female patient, diagnosed as having CF at the age of 7. Patient developed respiratory failure and undergone lung transplant (16 y/o), that changed patient quality of life drastically. Pre-transplant patient was treated with high doses of nephrotoxic antibiotics. Post-transplant patient was administered tacrolimus (TAC) prednisone. In subsequent years tacrolimus doses were repeatedly changed keeping concentration of TAC on steady level. Directly after transplant eGFR was normal 92 ml/min/1,73 m2. After 10 years eGFR level decreased to 9 ml/min/1,73m2, arterial pressure elevated and proteinuria occurred. In two-week time patient undergone three hemodialysis. 2 months later a deceased-donor kidney transplant was performed, patient received left kidney into her right iliac fossa.
Conclusions: Conclusion: Lung transplantation is a procedure that not only increases life expectancy of CF patients, it also greatly improves their life quality. Besides it’s positive aspects LT carries great risks. Posttransplant immunosuppressive treatment can cause many complications. Using this Case Report as an example, and with help of few statistical studies, we would like to present importance of lung transplantation in CF patients.

Keywords: cystic fibrosis, lung transplant, quality of life, immunosuppressive treatment

Dermatology

IDENTIFICATION OF CELL SURFACE BIOMARKERS IN HUMAN PIGMENT CELLS

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Introduction: Cutaneous melanoma is a neoplastic lesion with high mortality rates, and it develops from epidermal melanocytes. Cell surface proteins may not only serve as therapeutic targets but may also play role in examining pathological processes and monitoring therapies. Based on our previous proteomic analysis of human pigment cells, the aim of our study is to identify potential cell surface biomarkers in melanocytes and melanoma cells.
Methods: We used A2058 and WM35 melanoma cell lines and primary epidermal melanocyte cultures for our experiments. Based on proteomic analysis we selected three proteins for further examination: basigin (CD147) was identified in melanoma cell lines only, while tyrosinase related protein 1 (TYRP1) and gasdermin (GSDM) were present in melanocyte samples only. Firstly, we separated plasma membrane fractions and we analysed protein expressions. After that we performed immunocytochemistry reactions followed by confocal microscopic evaluation.
Results: Western blots confirmed our proteomic findings in terms of basigin and TYRP1, but GSDM was detected in all three cell cultures. While TYRP1 immunofluorescence corroborated the western blots, but surprisingly, signals for basigin were detected in all three cell lines, although the signals were increasingly stronger along with the degree of malignancy. GSDM immunopositivity was also examined in all three cultures but the expression was found to be weaker along with the degree of malignancy.
Conclusions: Our results identified new targets that may serve as potential biomarkers in melanoma treatment. TYRP1 may be used in separating benign and malignant lesions, while basigin and GSDM expression may give us information on progression.

Keywords: melanocyte, melanoma, biomarker, cell surface, protein

THE RETROSPECTIVE ANALYSIS OF CLINICAL PRESENTATION AND EPIDEMIOLOGICAL ASPECTS OF PATIENTS WITH HERPES ZOSTER

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Introduction: Varicella-zoster virus (VZV) leads to primary infection, varicella, which is characterized by diffuse rush and it is most frequently observed in children. After that, virus remains in latent form in the sensory dorsal root ganglion cells. Later reactivation of this virus causes herpes zoster (HZ).
Methods: We conducted a retrospective study using a telephone survey. 260 patients were included in the study. They were divided into equal-sized groups depending on HZ history. We examined gender, age, comorbidities, years of smoking, place of residence and body mass index (BMI) between these two groups. Additionally, we investigated the clinical characteristics during disease.
Results: Among patients with HZ, 56,2% were female and 43,8% were male. Frequency of occurrence of herpes zoster was higher in urban areas (65,4%) than in rural areas (34,6%). There was significant statistical difference regarding to pack-year, BMI and occurrence of rheumatoid arthritis between these two groups. 24,62% of patients presented postherpetic neuralgia and 8,46% were hospitalized. Head and neck involvement occurred in 13,08%, trunk involvement in 68,46% and extremities involvement in 18,46%. Prodromal symptoms, Visual Analog Scale for Pain (VAS) and complications after HZ are going to be presented during Conference.
Conclusions: The study confirmed HZ is more common in women and most commonly involved location is trunk. HZ occurs more frequently in urban areas. Greater number of pack-years, BMI and rheumatoid arthritis are associated with occurrence of HZ.

Keywords: varicella-zoster virus, herpes zoster, shingles

USING OF TOPICAL METHODS IN THE TREATMENT OF SEBORRHEIC KERATOSIS

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Introduction: Seborrheic keratosis (SK) belongs to the group of benign skin neoplasm. Due to the widespread prevalence of seborrheic keratosis, the question arises about the optimization of treatment and diagnostic algorithms.The aim of this study is to introduce topical resources in the treatment of SK as an alternative to invasive interventions that do not always meet the aesthetic needs of patients.
Methods: We examined 20 patients with seborrheic keratosis. Confirmation of the diagnosis was performed on the basis of clinical-dermatoscopic-pathomorphological examination.
Results: SK were localized on the trunk, limbs and face. Randomly, patients were divided into 2 groups. First group applied topically 30% hydrogen peroxide solution once daily for 5 days with exposure in 1 minute, which led to the formation of a crust on a surface of the lesion, which disappeared in 1-1.5 weeks after therapy with subsequent complete clinical recovery. The second one was administered adapalene gel twice a day for 2 weeks, with an additional application of 5% salicylic ointment twice a week, once in the evening (instead of adapalene), after the above therapy, used a 30% solution of hydrogen peroxide. In the last group, there was a decrease in the size of SK using adapalene as monotherapy and complete cleaning of the skin occurred with the combined scheme.
Conclusions: The use of topical oxidant and retinoid in the treatment of seborrheic keratosis is a promising area. ?he main advantage of topical therapy is the absence of secondary pigmentation or scars and the possibility of self-application without invasive intervention.

Keywords: seborrheic keratosis, topical treatment, adapalene, hydrogen peroxide

RARE AUTOIMMUNE DISORDER IS STILL UNKNOWN WITH ACTIVE TRIGGERANCE IN CUTANEOUS PARTS

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Introduction: Cutaneous Lichen Planus (LP) is rare, chronic, inflammatory, autoimmune disorder, rash or disease of skin, nails and scalp. Its immune mediated disease that's affects cutaneous parts as well as mucous membrane. Cause is still unknown
Methods: In research laboratory 145 cases of histological diagnosed LP samples were included. Clinical Features like: Age, Sex, Type of LP, Location was recorded. We did a biopsy to confirm whether it is LP or Lichen planus associated with other outbreak Blood Test is done with: WBC'S count, RBC'S count, IgE antibodies test. We used Haematoxylin and Eosin stain stained slides and we retrieved all information from recorded cases. All morphological features were noted for comparison of clinical subtype. Patient had a Punch Biopsy under research of pathologist to render the LP with microscopic diagnosis with local anesthetic. Predisposition genetics testing to look for DNA alternations in genes with LP risk and determination.
Results: Leads to hyper pigmentation, purple, polygonal, papules, planar, pruritic, plaques. There is no limitation as more research is to be carried out. Statistical Analysis was performed of and we came to know about subtypes for male and female. Out of 145 cases, majority (61%) was of classical LP. Majority of cases were in the age group of 20-40 years and shows female preponderance. The age range of the patients was from 5 to 60 in males and 7 to 76 in females. The mean age of male was a decade lower than that of females in LP and Lichen Planus Pigmentosus all over the body more on the lower limbs.
Conclusions: In statically to world and India, we concluded: common age of occurrence of LP is lowered as comparison to western literature, and large number of cases is 28% are in the pediatrics age group <18 years. Classical LP has a strong association of involvement of upper limb is more common in Female Patients in LP.

Keywords: LP- lichen planus . IgE - immunoglobulin E. WBC - white blood cells . RBC - red blood cells

POST-TRANSPLANT SKIN CANCERS: CASE REPORT OF NMSC IN KIDNEY TRANSPLANT RECIPIENT.

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Background: As organ transplantation is in great demand, progress in the field of transplantology and the modern methods of immunosuppression have extended the survival time of patients after organ transplantation. Nevertheless, cancer is currently among the three leading causes of death after solid organ transplantation. ?Risk of non-melanoma skin cancers including squamous cell carcinoma and basal cell carcinoma is 10 times higher in kidney transplantation recipient than in the general population. Apart from immunosuppressive therapy, older age at transplantation and exposure to sunlight are believed to be the most important risk factors for the development of NMSC in organ transplant recipient. The aim of the study is to present the case of NMSC in kidney transplant recipient.
Case Report: A 63- year- old male had a kidney transplant in 2005. Since that time he has been receiving immunosuppressive therapy including: tacrolimus, mycophenolate sodium. At the time of admission to the Dermatology Department the patient showed up with several fast growing skin cancers located on the head, neck and an arm. Dermoscopic evaluation was perform to all lesions. The most suspicious lesions were removed surgically. The result of histopathological examination revealed squamous cell carcinoma and basosquamous cell carcinoma. Regular dermoscopic follow up was recommended.
Conclusions: Taken together, the data from the literature indicate that organ transplantation and its subsequent immunosuppression significantly increase the risk of NMSC. The presented case draws attention to maintain oncological vigilance in patients after organ transplantation.

Keywords: NMSC, squamous cell carcinoma, basal cell carcinoma, kidney transplantation, carcinoma

RARE SYNDROMES: FOCUS ON DERMATOLOGY

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Background: Bloch-Sulzberger syndrome or incontinentia pigmenti (IP) is a systemic melanoblastosis is characterized by specific staged changes in the skin, lesions in the central nervous system, hair, nails, eyes, teeth, musculoskeletal system. IP occurs with a frequency of 1:75000 and develops due to a congenital defect of a gene located on chromosome Xq27-Xq28.
Case Report: The medical history of 12 years old patient Mariia was analyzed. The girl was born with a weight of 3300 grams from the second pregnancy complicated by anemia. Linearly located erythematous-vesicular rashes were found on the flexor surface of the skin of the upper and lower extremities, lateral surfaces of the torso right after birth. Neurosonography detected ventricular extension. Hypoxic-ischemic encephalopathy was detected by neurological examination. Geneticist suspected Bloch-Sulzberger syndrome at the age of 3 months. Delays in physical development, lesions of the skin were observed. The child has developed without neurological, psychomotor and intellectual abnormalities. Teeth erupted after 12 months with an incorrect location and conical shape. Diffuse alopecia, nail underdevelopment, areas of lichenification and hyperpigmentation on the skin were revealed. Clinical diagnosis. Bloch-Sulzberger syndrome. Mitral valve prolapse. Abnormal chords of the left ventricle. Abnormal posture. Convergence insufficiency, accommodation spasm, hyperopic astigmatism of both eyes. Divergent squint of the left eye. Retinal angiopathy.
Conclusions: The case described by us is of great interest to doctors of various specialties who work with young children because of the rarity of this pathology. It is important to diagnose IP in time to prevent misdiagnosis.

Keywords: Incontinentia pigmenti, Block-Sulzberger syndrome, Genetic diseases, X-linked.

CUTANEOUS LESIONS DURING COVID – 19 INFECTION : AN EVIDENCE – BASED REVIEW

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Introduction: SARS-CoV2 is a new virus from the Coronaviridae family. The disease progression caused by this virus was declared by the WHO as a global pandemic on March 11th, 2020. The virus causes severe pneumonia with fever and cough. Literature data report accompanying symptoms such as anosmia, ageusia. Skin symptoms have been also described.The aim of the study was to review the scientific literature regarding cutaneous manifestations of SARS – Cov2 infection.
Methods: The PUBMED data base was searched using the following keywords: COVID19, SARS - Cov2, dermatology, skin, cutaneous manifestations. The most relevant publications were gleaned and described later.
Results: The most frequently reported symptoms were: morbilliform rash, pernio – like lesions, urticaria, varicella-like lesions and livedo reticularis-like eruptions. Pernio-like changes occurred most often on the feet. The presence of retiform purpura was associated with a higher rate of hospitalization and patients themselves required respiratory therapy more often. Some skin lesions occurred before the onset of respiratory symptoms. Acute Generalized Exanthematous Pustulosis (AGEP) was the most frequently reported treatment complication.
Conclusions: The mechanisms of skin lesions in COVID are not fully understood. Further research and observations are required to understand them thoroughly. Despite the non-specific nature of skin lesions, their occurrence may suggest infection with SARS – Cov2 and requires testing and confirming the infection.

Keywords: COVID19, SARS - Cov2, dermatology, skin, cutaneous manifestations

ATTITUDES TOWARDS CLINICAL TRIALS - PILOT SURVEY AMONG POLISH PATIENTS' OF THE DERMATOLOGICAL CLINIC IN WARSAW

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Introduction: Randomized, double blind, placebo-controlled clinical trials (CTs) are the gold standard of evidence based medicine. Timely recruitment, which is one of the challenges, could be improved by better understanding of patients' perspectives towards CTs.
Methods: The aim of the study was to analyze the level of knowledge and attitudes towards clinical trials of patients of the Department of Dermatology in Warsaw. The original 10-questions survey was performed in October 2020. It consisted of two sections: analysis of patients' attitudes to CTs and barriers and drivers for potential participation.
Results: A total of 198 respondents completed the survey, out of which 55.6% were women (n=110). 70.2% of respondents came across the term "clinical trials" and 64% associated CTs with a chance to introduce a new drug. Out of all respondents 40.9% declared willingness to participate in a clinical trial, 37.4% were not sure about the decision and 21.7% would refuse to participate. Among the reasons for potential participation, respondents who would agree, most often mentioned "a chance to receive a new, more effective drug" (90.1%, n=73), while the most frequently indicated disincentive among those who would refuse, was "refusal to be a guinea pig" declared by 58.1% of respondents (n=25).
Conclusions: A significant number of respondents were familiar with the term "clinical trials", majority presented positive attitudes towards CTs and declared willingness to participate in a CT. Further patients' education can positively contribute to maintaining high interest and involvement in CTs.

Keywords: clinical trials, awareness, perception

ATTITUDES TOWARDS MEDICAL CANNABIS – PILOT SURVEY AMONG POLISH DERMATOLOGICAL CLINIC PATIENTS

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Introduction: For the last several years, we have observed a growing interest of the public for the use of cannabis-derived products. Currently, there are about 60 ongoing clinical trials evaluating effectiveness of cannabidiol(CBD) among patients. Although the attitude towards the use of cannabis derived products among physicians, including dermatologists, has so far been described, the patients' perspective remains unknown.
Methods: The aim of this study was to evaluate three main areas: the level of knowledge about the legality of hemp products, patients' own experience with cannabis-derived products and to specify sources of patients' fears/concerns/doubts of such therapy. The data set was being collected for two months by the properly trained personnel in the Dermatologic Clinic of the Medical University of Warsaw. The Pen-and-Paper Personal Interview questionnaire consisted of six closed-ended questions and the demographics.
Results: Of the 197 respondents, 55.8% were women. According to 45.2% of respondents the use of CBD containing products is in accordance with Polish law. Every third respondent heard about the possibility of using cannabinoid derivatives in dermatology, but only 16.8% used such products. Regarding the concerns related to the potential use of cannabis products, the most frequently patients mentioned the risk of complications (18.8%); risk of drug interactions (17.3%), high price of the products (17.3%) and fear of addiction (14.7%).
Conclusions: Patients are interested in the use of cannabis-derived products in the prevention and treatment of dermatological conditions however the current, unclear status of hemp products is often a barrier for making decisions about the potential use.

Keywords: cannabidiol, dermatology, medical cannabis

Doctoral students` session

INFLUENCE OF THE LABOR COURSE AND CHARACTERISTICS OF THE MOTHER AND NEWBORN ON THE EXPRESSION OF SELECTED GENES FROM THE IAP FAMILY IN MESENCHYMAL STEM CELLS OF THE UMBILICAL CORD BLOOD

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Introduction: The role of IAPs in stem cells has not been elucidated yet. Researchers suggest that IAPs are important for protecting cells from apoptosis due to the inhibition of caspase activation.The aim of the study was to evaluate the expression of selected genes from the IAP family in the human stem cells isolated from the umbilical cord.
Methods: The research was conducted on umbilical cord mesenchymal stem cells obtained immediately after delivery from 30 patients hospitalized in the Department of Obstetrics and Pathology of Pregnancy, Independent Public Clinical Hospital No. 1 in Lublin. The research was carried out with the consent of the Bioethics Committee. Stem cells were isolated from the umbilical cord by explant culture technique. The CD73, CD90, and CD105 antigens were assessed by flow cytometry and the expression of selected genes from the IAP family by qPCR technique.
Results: Mesenchymal character of the isolated cells was confirmed by:the presence of SOX2 and POU5F1 gene transcript,the cytometric analysis and the performed cell culture.
Conclusions: The results found that the expression of selected genes from the IAP family in the mesenchymal stem cells obtained from the Wharton jelly of the umbilical cord depends on the mother’s age, the way of pregnancy termination, and physicochemical parameters of the umbilical cord blood.

Keywords: mesenchymal stem cells, umbilical cord blood, gene expression, delivery

QUALITY OF LIFE AND SOCIAL SUPPORT AMONG PATIENTS WITH RARE NEUROLOGICAL DISORDERS

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Introduction: About 500 000 people in Europe are affected with rare neurological diseases, whereas majority of them remain undiagnosed. Their quality of life is reported as one of the lowest among all patients with rare diseases. Social support plays a substantial role in coping with physical disability. Aim of the study was to assess quality of life (QoL) and social support in relation to socio-demographic, emotional and functional factors among adult patients with four rare neurological disorders: adrenoleukodystrophy (X-ALD), hereditary spastic paraplegia (HSP), Charcot-Marie-Tooth disease (CMT) and chronic inflammatory demyelinating polyneuropathy (CIDP).
Methods: We studied 50 consecutive patients and outpatients (aged: 46,8 ± 13,2 years; 64% male) with following rare neurological disorders: X-ALD (11 subjects), HSP, CMT (12 subjects each) and CIDP (15 subjects). We assessed quality of life (using 36-Item Short Form Health Survey), social support (using Berlin Social Support Scales) as well as level of anxiety, depression, fear of falling, physical functioning of the limbs and fatigue.
Results: Among participants, physical QoL was average (mean: 50,0 ± 19,8 points) and emotional QoL - moderate (mean: 62,1 ± 17,5 points). Fatigue was the only independent predictor associated with lower QoL score in both aspects: physical (beta -0,33; 95% confidence interval [CI] -0,59 – -0,07) and emotional (beta -0,5; 95% CI -0,76 – -0,25). Received social support was negatively correlated with the level of fatigue (r=-0,35; p=0,014). We did not observe any direct relation between quality of life and social support.
Conclusions: Patients with rare neurological disorders obtained worse results in terms of physical aspect of QoL than emotional one. Depression, anxiety and fatigue may mediate relation between quality of life and social support.

Keywords: rare diseases, quality of life, social support, neurology

THE EFFECTIVENESS OF PHYSIOTHERAPY IN THE MANAGEMENT OF TEMPOROMANDIBULAR DISORDERS.

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Introduction: Temporomandibular disorders (TMD) are the second most common cause of chronic pain in the human musculoskeletal system. The triad of symptoms of TMD includes pain within the temporomandibular joint, limitation of its mobility and acoustic symptoms. The aim of the study was to present the methods of stomatognathic physiotherapy and to assess its effectiveness in patients with hypomobility of temporomandibular joints (TMJ).
Methods: 41 patients (40.2 ± 10.6 years) were examined for signs of TMD using the Manual Functional Analysis of masticatory system (MFA) questionnaire. In the above group, 20 patients showed hypomobility of TMJ. They underwent a 3-week physiotherapy consisting of manual therapy and exercises. In the study group, linear measurements of TMJ mobility and palpation of selected masticatory muscles were performed. Pain was assessed before and after 3 weeks of therapy according to VAS. Statistical processing of the data was done with STATISTICA 13 and was conducted considering significance at a p-value < 0.05.
Results: Significant improvement in TMJ's mobility, which increased on average by 6.6 mm ($p = 0.00054$) and reducing of pain, a decrease of 3 points on average on the VAS scale ($p = 0.00002$) was achieved.
Conclusions: The applied physiotherapy algorithm, including manual therapy and exercises of masticatory muscles, is effective in the case of improvement in the range of motion of TMJ's and reduction of pain in patients with hypomobility of TMJ's.

Keywords: temporomandibular disorders, hypomobility of temporomandibular joints, physiotherapy

HOW DOES CHRONIC RHINOSINUSITIS IMPACT NASAL CAVITY ANATOMICAL STRUCTURES

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Introduction: Background. Chronic rhinosinusitis is a highly prevalent condition affecting the general population, associated with significant reduction of quality of life. It may result in permanent changes in the nasal and sinus mucosa. Purpose. To evaluate features of nasal cavity anatomical structures in CT scans, patients with chronic rhinosinusitis
Methods: The retrospective study was conducted at the Headline Clinic and Pauls Stradinš Clinical University Hospital with 148 patients with 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%) had ostiomeatal complex narrowing. 75% (n=111) had radiologically confirmed maximal cerebral 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 hypertrophy on 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). No statistically significant correlation was found between signs of chronic inflammation (sclerosis) and nasal concha hypertrophy ($p>0.05$).
Conclusions: Chronic rhinosinusitis has important affect to nasal cavity anatomical structures. For many patients, the narrowing of the osteomeatal complex was found, witch is important sing in chronic rhinosinusitis. The data showed that inferior nasal concha hypertrophy was the most common found.

Keywords: Rhinosinusitis, nasal cavity, anatomical structures

MORPHOLOGICAL FEATURES OF ESOPHAGEAL MUCOSA DAMAGE IN PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE ASSOCIATED WITH OBSTRUCTIVE SLEEP APNEA/HYPOPNEA SYNDROME

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Introduction: Nowadays morphological features of esophageal mucosa damage in patients with gastroesophageal reflux disease (GERD) and obstructive sleep apnea/hypopnea syndrome (OSAHS) are not completely researched. The aim of study is to determine morphological features of esophageal mucosa damage in patients with GERD and OSAHS.
Methods: 143 patients have been undergone esophagogastroduodenoscopy with biopsy of the lower third of the esophagus and respiratory monitoring. Patients were divided into 4 groups: group 1 – patients with GERD (n=35), group 2 – patients with GERD and OSAHS (n=40), group 3 – with OSAHS (n=38), group 4 – comparison group (n=30). Morphological examination with morphometric assessment of epithelium thickness, height of connective tissue papillae, internuclear distances was performed.
Results: Patients with GERD (from group 1 and group 2) are characterized by large thickness of the, higher connective tissue papillae, wider internuclear spaces in all epithelium layers, enlarged intercellular spaces in the epithelium of the esophagus in contrast to patients of comparison group. Patients with GERD and OSAHS have more pronounced thickness of the epithelium (372 (324; 414) and 312 (264; 360) ?m, ?=0,042) and wider internuclear distances in the stratum spinosum of the epithelium (8 (7; 9) and 7 (6; 8) ?m, ?=0,048) compared with patients with GERD. In patients with GERD and OSAHS high connective tissue papillae with dilated capillaries and signs of microangiopathy, sclerotic changes in the mucosa of the esophagus are determine.
Conclusions: The obtained data show that patients with GERD and OSAHS had more pronounced epithelial disorganization in comparison with patients with GERD without OSAHS.

Keywords: gastroesophageal reflux disease, obstructive sleep apnea/hypopnea syndrome, mucosa of the lower third of the esophagus, thickness of the epithelium, connective tissue papillae, internuclear distances

SCREENING FOR ELDER ABUSE AND ITS RELATIONSHIP WITH DEMOGRAPHIC VARIABLES IN POLAND

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Introduction: Elder abuse and neglect is one of the most important problems of social and health policy among countries around the world. Making a real and reliable assessment of the occurrence of abuse is dificult to implement. The aim of this work is to show the frequency of physical, psychological, sexual abuse and financial exploitation among older adults.
Methods: Older adults, who were aged >=60 years (N=200) were qualified for the study. The studied population consisted of 112 women (56.0%) and 88 men (44.0%). The whole project procedure only included filling in the survey questionnaire. The verification of hypotheses was based on tests: Chi-square test, Chi-square test with continuity correction and logistic regression models.
Results: Within the obtained own results, out of 200 older adults, 77 respondents (38.5%) experienced abuse and neglect during the last 12 months. Most of the respondents (68.8%) experienced various forms of abuse simultaneously. Among those who experienced abuse, 75.3% experienced psychological abuse, 68.8% financial exploitation, 48.1% physical abuse, and 22.1% experienced sexual abuse. The rate of physical (OR 2.48; 95% CI 1.13, 5.44; p=0.02), verbal (OR 1.94; 95% CI 1.02, 3.67; p=0.04), sexual (OR 4.05; 95% CI 1.13, 14.5; p=0.03) and economic (OR 1.98; 95% CI 1.02, 3.83; p=0.04) abuse is statistically significantly higher, respectively, in women than in men. The level of education is a risk fact for physical abuse (p=0.02). It has also been shown that singles, people with the income<233 EUR and people living in urban areas are most often victims of elder abuse and neglect.
Conclusions: The results suggest that elder abuse and neglect is a fairly common phenomenon. Our data also provide confirmation of other researches conducted in this area.

Keywords: Elder abuse, Risk factor models, Epidemiology, Prevention

METHOD OF COMPLEX VISUAL ASSESSMENT OF COLORECTAL STAPLED ANASTOMOSIS FOR ANASTOMOTIC LEAK PREVENTION

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Introduction: Colorectal anastomosis is one of the most common manipulations in abdominal surgery. Colorectal anastomosis (CA) failure after rectal or sigmoid resection remains an important problem in colorectal surgery, and its frequency has remained stable in recent years (6,3% by JS Kim et al., 2009). This complication increases postoperative mortality and hospitalization. Evaluation of the quality of the performed anastomosis including stapler line consistency is one of the priority areas, because today there is no consensus on this issue.
Methods: We have analyzed results of surgical treatment of 34 patients who underwent laparoscopic resection of the rectum and sigmoid colon with stapled anastomosis at the level of mid and upper rectum and its visual assessment. No diverting stoma was applied. For visual assessment we developed and used a scoring system based on intracorporeal and videorectoscopic investigations. Parameters taken into account were mucosal and serosal color changes, presence of submucosal hematoma or visible staples.
Results: Specific anastomotic complications were diagnosed in 3 (8.8%) patients and after intracorporal suture reinforcement no anastomotic leaks were found postoperatively.
Conclusions: The developed scoring system allowed to detect and eliminate suturing defects and bleedings and elect the best tactics of anastomotic leak prevention in order to avoid uncomfortable diverting ileostomy in all the patients.

Keywords: colorectal anastomosis, laparoscopic resection, anastomosis failure, anastomosis reinforcement, anastomosis assessment

THE EFFECT OF BOVINE COLOSTRUM SUPPLEMENTATION ON SIGA CONCENTRATION IN TRAINED AND PHYSICALLY ACTIVE PEOPLE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Moderate physical activity has a positive impact on body functions, nevertheless strong evidence-based research confirms that intensive physical training makes athletes more susceptible to infections, especially upper respiratory tract symptoms (URS). Hence, it is important to elaborate different strategies to improve the immunological functions, like nutrition or supplementation. Bovine colostrum (BC) is one the products applied to improve selected immunological functions. However, only scarce evidence reported benefits of BC treatment on the immunity, without any consensus on the supplementation strategy. The aim of this meta-analysis was to quantify the effects of BC supplementation on SIgA, as the most investigated parameter in terms of mucosal immunity and URS during exercise, in physically active people.
Methods: Nine randomised controlled trials (RCTs) investigating the effect of BC supplementation on SIgA concentrations in athletes and physically active adults (n=257) were selected and included in the analyzes.
Results: The analyzes showed inconclusive results. It was demonstrated that BC supplementation has a positive but non-significant effect on the pre-exercise SIgA concentration and pre-exercise SIgA concentration changes from baseline to post-supplementation period, whereas there was no significant effect on the post-exercise SIgA concentration or its changes during the supplementation period.
Conclusions: Previous research has shown BC to reduce URS, nevertheless the results of this meta-analysis showed no significant changes on SIgA, suggesting that a period of supplementation longer than 4 weeks and/or higher doses of BC split throughout the day may be necessary to induce vital changes in salivary IgA production.

Keywords: colostrum, immunology, physical activity, immunity support, siga

THE INFLUENCE OF OBSTRUCTIVE SLEEP APNEA/HYPOPNEA SYNDROME ON ?-CADHERIN EXPRESSION IN ESOPHAGEAL EPITHELIUM

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Introduction: According to the literature data obstructive sleep apnea/hypopnea syndrome (OSAHS) is associated with increased risk of development of oncological diseases with different localization. The activation of the processes of epithelial-mesenchymal transition seems to be one of these mechanisms, in which the loss of E-cadherin by cells plays a main role. The aim of study was to define the effect of OSAHS on E-cadherin expression in the esophageal epithelium.
Methods: 58 patients were included in the study and underwent a somnological investigation. Patients were divided into 3 groups: group 1 (n=17) – patients without OSAHS, group 2 (n=26) – patients with mild OSAHS, group 3 (n=15) – with moderate OSAHS. All patients underwent esophagogastroduodenoscopy with biopsy of the lower third of the esophagus. Micropreparations of the esophageal epithelium were stained with monoclonal antibodies to E-cadherin to assess its expression.
Results: Decreased expression of E-cadherin, in contrast to the comparison group, was found in patients with both mild OSAHS (0,748 (0,623; 0,833) and 0,539 (0,263; 0,676) respectively, p=0,044), and with moderate OSAHS (0,748 (0,623; 0,833) and 0,163 (0,026; 0,365) respectively, p=0,000). Patients with moderate OSAHS had lower E-cadherin expression in comparison with patients with mild OSAHS (?2-3=0,046). Correlation between E-cadherin expression and AHI (r=-0,5, p<0,05), AAIresp (r=-0,42, p<0,05), maximum duration of apnea (r=-0,33, p<0,05), DI (r=-0,32, p<0,05), average saturation (r=0,33, p<0,05) were revealed.
Conclusions: OSAHS has a negative impact on the state of esophageal mucosa, contributes loss of E-cadherin by the epithelium, promotes development of disorganization of epithelial tissue and may increase the risks of precancerous diseases and esophageal cancer.

Keywords: obstructive sleep apnea/hypopnea syndrome, E-cadherin, esophageal epithelium, epithelial-mesenchymal transition, esophageal cancer

CLINICAL CHARACTERISTICS OF PATIENTS WITH THERAPY-RELATED ACUTE MYELOID LEUKEMIA- SINGLE CENTER RETROSPECTIVE ANALYSIS OVER TWO DECADES.

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Introduction: Therapy-related acute myeloid leukemia (t-AML) represents hematopoietic neoplasm considered as subtype with dismall prognosis which occurs as late complication of prior cytotoxic therapy. Patients, who received chemotherapy are at 4,7-fold increased risk for t-AML. t-AML accounts for up to 20% of all AML cases and its number is expected to grow worldwide.
Methods: Retrospective analysis of t-AML patients from the Department of Hematology (Poznań, Polnad) hospitalized between 2000 and 2019.
Results: Among 704 patients hospitalized for AML, 7,5%(53/704) were diagnosed as t-AML (19 males, mean age 53,6 y.o.). 67,9% (36/53) of t-AML patients had previous medical history of solid tumour (ST); 32,1% (18/53) of hematology neoplasm (HN). Most common primary malignancy among ST patients was breast cancer (47,2%), among HN patients- Hodgkin lymphoma (35,3%). According to the ELN 2017 genetic risk stratification 67,74% of t-AML represented adverse-risk (Adv), 22,58%- intermediate-risk and 9,67%- favorable-risk (Fav) group. Majority of patients- 43,4% (23/53) underwent intensive chemotherapy followed by alloHCT, 41,5% (22/53) received chemotherapy and 15,1% (8/53) underwent palliative care. Mean overall survival (OS) was 136,0 vs. 28,4 months in Fav and Adv groups respectively (p=0,543). Mean OS among t-AML pts undergoing intensive chemotherapy vs. chemotherapy with alloHCT was 16,8 vs.47,2 months respectively (p=0,023).
Conclusions: t-AML represent life-thretening and often fatal late complication of prior cytotoxic therapy. Disease is characterized by poor prognosis with high unfavorable genetic abnormalies. Early detection of DNA lesions remains essential for deeper understanding the etiology and than improving treatment strategies in t-AML.

Keywords: therapy-related acute myeloid leukemia, allogenic hematopoietic cell transplantation

MODIFIED MONOANASTOMOTIC GASTRIC BYPASS IN MORBID OBESITY SURGERY

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Introduction: Monoanastomic gastric bypass at the present stage is a group of operations for morbid obesity, united by the idea of imposing a single anastomosis. Historically, the technique of gastric bypass (mini gastric bypass, MGB) emerged as the development of classical gastric bypass under the influence of the works of Robert Rutledge and other authors. Despite the reduction in the duration of the operation due to the lack of need to impose a second anastomosis, the requirements for the imposition of gastroenteroanastomosis are increasing. Due to the large number of types of gastric stump formation and methods of anastomosis, a special role is played by the search for such techniques that have increased reliability and antireflux properties, while maintaining the simplicity and speed of anastomosis.
Methods: The results of treatment of 30 patients were studied. Patients are divided into two groups: 19 patients - the main group, 11 patients - the control group. In the main group of women there were 18 (94.7%), men - 1 (5.3%). In the control group there were 10 (91.0%) women and 1 (9.0%) men. Anthropometric and age indicators of patients of 1, 2 groups (M ± m; Me (Q25; Q75)). Group 1(N = 19): weight-115 (99; 130), Growth - 167.2 ± 2.1, BMI-41.50 (38.05; 44.19), age - 39.42 ± 2.58. Group 2 (N = 11): weight-117 (107; 132), Growth - 167.4 ± 1.8, BMI-40.97 (39.78; 46.87), age - 37.36 ± 3.65 The differences were considered statistically significant at $p < 0.05$.
Results: We have developed a modification of monoanastomotic bypass. "Method of surgical laparoscopic treatment of morbid obesity" - patent No 141842. The duration of the operation ranged from 120 to 290 minutes. The postoperative period was 5 (4; 6) days in the main group and 7 (5; 8) days in the control group ($p = 0.13$). In both groups, weight loss for 6 months ranged from 12 to 52 kg. Anthropometric indicators of patients of 1, 2 groups after 6 and 12 months. Group 1 (N = 19): Weight after 6 months, kg - 86 (81; 98), BMI after 6 months - 31.28 (29.41; 33.79), Weight after 12 months - 77 (72; 82), BMI after 12 months - 27.70 (26.20; 29.27) Group 2 (N = 11): Weight after 6 months, kg - 90 (83; 93), BMI after 6 months - 31.64 (29.37; 29.95), Weight after 12 months - 73 (70; 79), BMI after 12 months - 26.03 (25.22; 26.95)
Conclusions: 1. Monoanastomotic gastric bypass in a modification of the clinic is an effective and safe operation for the treatment of morbid obesity. 2. The developed technique has the same positive properties as the method of Roux-en-Y. 3. Further research is needed to evaluate the results in the remote period.

Keywords: Morbid obesity, monoanastomotic gastric bypass, Roux-en-Y bypass, dumping syndrome.

VISFATIN AND OMENTIN CONCENTRATIONS IN BREAST MILK OF DIABETIC MOTHERS – DO THEY AFFECT A NEWBORN? INITIAL REPORT.

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Introduction: Visfatin and omentin are adipokines produced by white adipose tissue, involved in regulation of numerous metabolic pathways. Due to their insulin-sensitizing effect, alterations in circulating levels of visfatin and omentin have influence on pathogenesis of Gestational Diabetes Mellitus. The aim of this study was to investigate the potential influence of Gestational Diabetes Mellitus on breast milk visfatin, and omentin concentrations. The relationships between these adipokines, maternal Body Mass Index, maternal comorbidities and neonatal body weight changes in the first week of life were investigated.
Methods: The study included 28 mothers with diet-controlled Gestational Diabetes Mellitus, insulin-controlled Gestational Diabetes Mellitus and healthy mothers; and their newborns born at term and in generally good condition. Breast milk samples were obtained and the levels of visfatin and omentin were determined by a commercial enzyme-linked immunoabsorbent assay. Statistical analyses were performed with statictical significance level set at $p<0.05$.
Results: The main initial findings of the study demonstrate that: 1) visfatin and omentin are secreted into human breast milk, with significant diferences in their concentrations between the study groups ($p<0.05$); 2) there is a strong positive correlation between concentrations of these two adipokines ($r=0.827$, $p=0.000001$); 3) there is a moderate positive correlation between the omentin concentration in breast milk and the maximal precentage of birth weight loss ($r=0.429$, $p=0.023$).
Conclusions: Visfatin and omentin seem to influence the change of antropometric measurements in infants and their mothers. Futher research is needed in this subject.

Keywords: visfatin; omentin; gestational diabetes; breast milk

HOW DOES THE FORM OF MULTIPLE SCLEROSIS AFFECT THE APPEARANCE OF GAIT AND BALANCE DISORDERS?

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Introduction: Multiple sclerosis (SM) is a progressive chronic inflammatory and demyelinating disease of the central nervous system. The etiology of the disease is still poorly known but medical investigation are putting the impact of the immune system disorders. We can distinguish four forms of this disease. Multiple sclerosis is defined by many, various symptoms. The most common and often occurring signs of the disease are gait and balance disorders.
Methods: The aim of the study is to shown quantitative and qualitative differences in gait and balance among people with multiple sclerosis with taking into consideration the form of the disease. The study was carried out among people with multiple sclerosis. The study group consist of 20 people (12 women and 8 men). Patients were divided into group by taking into account the form of the disease. To assess the gait and balance disorders TUG test, Tinetti Test, Romberg Test and Berg Scale were done.
Results: The analyses showed that the form of the disease differed the results in the scales evaluating gait and balance disorders. The highest results in almost all the tests were achieved by people with mild and relapsing-remitting form of disease. The lowest results were achieved by people with the primary progressive form of disease.
Conclusions: SM is a disease with range of heterogeneous symptoms. The scientific reports give information that the gait and balance disorders affect the daily living of patients with SM. There is a need to do more specific investigation to find out how to deal with those symptoms.

Keywords: multiple sclerosis; balance disorders; gait disorders; form of the disease

LONG-TERM EFFECTS OF ADJUVANT INTRAVITREAL TREATMENT WITH AUTOLOGOUS BONE MARROW-DERIVED LINEAGE-NEGATIVE CELLS IN RETINITIS PIGMENTOSA

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Introduction: The autologous bone marrow-derived lineage-negative (Lin–) cells present antiapoptotic and neuroprotective activity. The aim of the study was to evaluate safety and efficacy of novel autologous Lin– cells therapy during 12-months follow up.
Methods: The intravitreal injection of Lin– cells in 30 eyes with retinitis pigmentosa (RP) was performed. The fellow eyes were considered as control. Functional and morphological eye examination was performed before, 1, 3, 6, 9 and 12 months after the injection.
Results: Patients whose symptoms started less than 10 years ago gained 14±10 letters, while those with longer disease duration gained 2.86±8.54 letters as compared to FE in 12-month follow-up (p=0.021). Significantly higher response densities of P1-wave amplitudes in the first ring of multifocal ERG in treated eyes as compared to baseline values and FE recordings in all follow-up points were detected. Accordingly, mean deviation in 10-2 computed perimetry improved significantly in the treated eyes as compared to fellow eyes 12 months after the procedure. The QoL scores improved significantly and lasted till 9th month visit.
Conclusions: Lin– cells-based therapy is safe and effective, especially for a well-selected group of RP patients with still maintained good function of foveal cones. Those results may help to select patients, improve efficacy and decrease risk of adverse effects of cell therapy in the future.

Keywords: retinitis pigmentosa, cell therapy, autologous bone marrow-derived lineage-negative (Lin–) cells, intravitreal injection

PROGNOSTIC VALUE OF PRETREATMENT NEUTROPHIL-TO-LYMPHOCYTE AND PLATELET-TO-LYMPHOCYTE RATIOS IN MULTIPLE MYELOMA PATIENTS TREATED WITH THALIDOMIDE-BASED REGIMEN

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Introduction: Neutrophils to lymphocytes ratio (NLR) and platelets to lymphocytes ratio (PLR) are considered as laboratory markers of inflammation. They can be potentially useful in predicting the course of multiple neoplasms including selected hematological cancers. The aim of the study was to assess the value of NLR and PLR in predicting the effects of therapy and prognosis in multiple myeloma patients treated with thalidomide-based regimen.
Methods: The study group consisted of 100 patients treated with the first line CTD (cyclophosphamide, thalidomide, and dexamethasone) chemotherapy. The NLR and PLR were calculated before treatment.
Results: High NLR was observed in patients with higher stage of the disease, with poor performance status, hypercalcemia, and high CRP. High PLR was associated with low BMI and high CRP. In patients with high NLR, significantly shorter PFS was observed (17 vs. 26 months, $p = 0.0405$). In addition, high values of NLR and PLR were associated with significantly shorter OS (38 vs. 79 months, $p = 0.0010$; 40 vs. 78 months, $p = 0.0058$).
Conclusions: Summarizing, NLR and PLR have a significant independent prognostic value for multiple myeloma patients. Furthermore, the NLR can be a predictive marker for the outcome of thalidomide-based chemotherapy.

Keywords: mutliple myeloma, thalidomide, NLR, PLR, cancer

Endocrinology and Diabetes

THE ESSENTIAL IS INVISIBLE TO THE EYES - DIFFICULTIES IN DIAGNOSING AND THE TREATMENT OF CARCINOID.

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Introduction: Carcinoid is a neuroendocrine tumor producing monoamines, originating usually in the digestive system. The most important are the tumors producing serotionin, 5-hydroxyindoleacetic acid (5-HIAA), histamine, catecholamines and prostaglandins. The increase of these substances in the blood stream results in typical symptoms, called the carcinoid syndrome.
Methods: Analysis of the recent PubMed, UpToDate publications regarding carcinoid, neuroendocrine tumors, and 5-hydroxyindoleacetic acid, along with analysis of the European Neuroendocrine Tumor society (ENETS) Guidelines.
Results: Carcinoid tumors often do not present any symptoms until late in the disease, when metastases occur causing characteristic symptoms related to the increased production of catecholamines and other substances. The most essential for carcinoid diagnosis are biochemical blood tests, mainly the serotonin and chromogranin levels, along with 5-HIAA concentration in the urine. Classic imaging is insufficient, therefore the detection rate is still very low and the diagnosis is very often incidental. The method of choice in carcinoid tumors is radical surgery, what is often unavailable for many patient with the advanced stage of the disease. In regard to the pharmacological treatment, the golden standard are believed to be somastatin analogues, which not only halt the progression of the disease, but also relieve the symptoms.
Conclusions: Increasing the awareness of the existence and main symptoms of carcinoid syndrome will increase the chance of a sooner diagnosis, which may lead to increasing the chances of survival. Early diagnosis is crucial in the diagnostic process, but the standard imaging techniques and biochemical tests are very often inconclusive.

Keywords: Carcinoid, Carcinoid syndrome, neuroendocrine tumors

METFORMIN AS A MEDICINE DECREASING CARDIOVASCULAR RISK IN PATIENTS SUFFERING FROM TYPE 2 DIABETES MELLITUS

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Introduction: Almost half of deaths in Poland are caused by cardiovascular system diseases. The main risk factor for progression of cardiovascular diseases (CVD) is type 2 diabetes mellitus (T2D). It is estimated that almost 3 million people suffer from T2D in Poland. Metformin is a promising medicine that reduces cardiovascular risk in patients with T2D. The aim of the work is to review current research on the effectiveness of the metformin as a medicine that reduces cardiovascular risk in patients with T2D.
Methods: The review was conducted on published systematic studies performed on platform PubMed, statistics of the Polish Cardiac Society and informations contained in the scientific literature.
Results: Metformin is the first-line medication for the treatment of T2D. The studies on its cardioprotective effects have been carried out for a relatively short period of time. Recent studies indicate its protective effect by vasodilation (by increasing the synthesis of nitric oxide), reducing the size of myocardial infarction and formation of atherosclerotic plaques, inhibiting apoptosis of cardiomyocytes or reducing oxidative stress.
Conclusions: Currently, metformin can be seen to have a great potential in the treatment of cardiovascular complications occurring in the course of T2D. It is possible that the detailed understanding of all mechanisms of action of metformin will lead to future advances in the treatment of not only T2D, but also cardiovascular and cancer diseases.

Keywords: metformin, type 2 diabetes mellitus, cardiovascular diseases, myocardial infarction

SECONDARY ADRENAL INSUFFICIENCY AS A MANIFESTATION OF PITUITARY MACROADENOMA

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Background: Non-functioning pituitary adenomas (NFPA) are a heterogeneous group of tumors that cause compression and/or hormone deficiencies symptoms. Gonadotroph deficiency is the most prevalent, followed by somatotroph, thyrotroph and corticotroph deficiencies. This case demonstrates ACTH deficiency (secondary adrenal insufficiency) – a relatively rare manifestation of NFPA.
Case Report: A 55-year-old woman with a 18 years history of labile type 1 diabetes and chronic thyroiditis was referred to Pauls Stradinš Clinical University hospital for further investigation due to frequent, severe episodes of hypoglycemia, episodes of hypotension, positional vertigo and general weakness. Objective examination: BP in supine position 96/63 mmHg, BP within 3 minutes of standing 67/50 mmHg. Thyroid US: chronic thyroiditis, TIRADS 2. Brain MRI: pituitary macroadenoma 8.7x12.2x8.8mm. Laboratory studies: decreased ACTH (5.61 pg/ml) and morning cortisol levels (0.79 mcg/dl), normal prolactin and TSH levels and decreased ft4 level (7.64 ng/ml). During another episode of hypoglycemia blood cortisol level was determined – 1.17 mcg/dl (decreased). These results indicated the confirmation of secondary adrenal defficiency.
Conclusions: This case report highlights several key points: 1. It is important not to attribute unexplained episodes of hypoglycemia to the labile course of diabetes mellitus and patient's noncompliance. 2. In patients with chronic thyreoidytis with a decreased level of a fT4 and preserved level of TSH hypothyroidism may be of mixed genesis. That is why is necessary to check other pituitary hormones levels to exclude hypopituitarism. 3. Orthostatic hypotension is uncommon in patients with secondary adrenal insufficiency – in this case it could be explained with autonomic diabetic neuropathy.

Keywords: secondary adrenal insuffiency, pituitary macroadenoma, diabetes mellitus

THE EVALUATION OF RADIOIODINE THERAPY OUT COME AFTER FIVE YEARS IN PATIENT WITH NON-TOXIC NODULAR GOITRE

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Introduction: There is no consensus regarding the optimum treatment of benign non-toxic goitre. Randomised studies have shown that levothyroxine has poor evidence of efficacy and is inferior to radioiodine therapy regarding goitre reduction. The aim of our study was to evaluate the short term efficacy of radioiodine therapy to reduce thyroid volume with minimal risk of hypothyroidism in patients with non-toxic nodular goitre.
Methods: We treated 110 patients, aged 20-76 years; (87%) of the studied groups were female and (13%) male; Iinitial 24 h radioiodine uptake (RAIU) was ranged between 22-44%, and thyroid volume ranged between 44-170ml, effective half-life was more than 3 days at the time of treatment. Qualification of these patients were based on normal levels of serum fT3, fT4, TSH and characteristic appearance on thyroid scans and ultrasound. Malignant changes were excluded in all nodules by fine needle aspiration biopsy. The activity dose was calculated by the use of Marinelli's formula and ranged between 200-800 MBq. The absorbed dose ranged between 150 and 260 Gy, and was proportional to thyroid volume. Thyroid ultrasonography, and thyroid scan with RAIU at 24 and 48-hours was done before, after 6, 12 month and yearly for the next four year of radioiodine therapy. Follow up control for the evaluation of fT3, fT4, TSH was done every 6 weeks in the first year. Then every 6 months for four years.
Results: After 12 months of radioiodine therapy a mean thyroid volume reduction of 46% was achieved. Euthyroidism persist in 91% of patients, and hypothyroidism develop in 9% of patients. After 3 years of radioiodine therapy 10% of patient develop hypothyroidism. After 5 years of radioiodine therapy a mean thyroid volume reduction of 49% was achieved and 11% of patients develop hypothyroidism. All patients were highly satisfied; the compressive symptoms relieved and exercise tolerance improved.
Conclusions: Radioiodine is non-invasive, safe and cost effective method of therapy for reduction of large non-toxic goitre and should not be restricted to elderly patients, or to patients with high operative risk, but should be used as first choice in every patient with non toxic nodular goitre with thyroid volume > 40 ml especially in patients with special profession. Surgery should be reserved as first choice if malignancy is suspected. The reduction of thyroid volume with low percent of hypothyroidism, were due to well accurate measurement of administered activity, relatively high effective half-life, & well-organised follow up.

Keywords:

DESPERATE TIMES CALL FOR DESPERATE MEASURES – NEW APPROACH TO LEVOTHYROXINE SUPPLEMENTATION

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Background: Hypothyroidism is one of the most common endocrine conditions that affects up to 5.3% of European population. Oral supplementation is used nearly always as the most convenient form of therapy. However, there are exceptions when this form is not acceptable to the patient. In such cases, administration of the hormone can pose a challenge and requires new approaches.
Case Report: The patient was 81-year-old man with a history of piriform sinus carcinoma treated with radiotherapy and surgery involving oesophageal reconstruction by autotransplantation of small intestine which was complicated by stenosis and intestine necrosis. Therefore, parenteral nutrition and treatment was the only option for this patient. He was consulted due to worsening hypothyroidism – TSH at 11.6 µIU/ml. In the anamnesis the patient reported paroxysmal atrial fibrillation treated with rivaroxaban, hypertension and type 2 diabetes mellitus managed with insulin. Due to necessity to implement the therapy as soon as possible and a 4-week waiting time for intravenous formula, it was decided to apply hormone supplementation in rectal suppositories. Therapy started with 500 micrograms of levothyroxine did not affect fT4 level. Doubling the dose resulted in significant rise in fT4 level and normalization of TSH. Eventually, on the 7th day of treatment euthyroidism was achieved.
Conclusions: This case report highlights the potential of levothyroxine suppositories in individuals with hypothyroidism and concomitant contraindications for oral therapy due to such conditions as gastrointestinal obstruction or impaired absorption. However, it should be remembered that effective supplementation with levothyroxine administered as rectal suppositories requires high doses of hormone.

Keywords: L-T4 suppository; hypothyroidism

ANALYSIS OF THE ULTRASOUND IMAGE OF THYROID NODULES IN DIFFERENT TYPES OF THYROID NEOPLASMS

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Introduction: Thyroid cancer is the most common endocrine malignancy. In ultrasound assessment(USG) of thyroid nodules the TIRADS scale(based on most significant features of malignancy) is commonly used. Thyroid cancers include Papillary(PTC), Follicular(FTC), Medullary and Anaplastic cancers.
Methods: Aim of the study was to evaluate USG features of neoplastic thyroid nodules, analyze them with respect to their histopathological type and asses applicability of EU-TIRADS scale. Our study took into account 188 patients with suspected/confirmed thyroid malignancy. Each patient underwent thyroid USG, then thyroidectomy. Histopathological results confirmed type of tumor in each patient. Hence descriptions of neoplastic nodules of confirmed type were analyzed.
Results: In PTC, most of 130 patients had hypoechoic(86.1%) and solid(93.1%) nodules that varied in shape.34% had microcalcifications.51.5% had peripheral vascularity pattern.91.5% of nodules scored 5 in TIRADS. In FTC, most nodules in 24 patients were hypoechoic(83.3%) and solid(79.2%) of mostly round(58.3%) shape.41.7% of nodules had peripheral halo of decreased echogenicity and 16.7% had microcalcifications.54.1% had peripheral vascularity pattern and 29.2% presented capsular bulging. 79.2% of nodules scored 5 in TIRADS. Medullary cancers(8 patients) were mostly hypoechoic and solid, with variety of shapes.50% of them had halo effect and microcalcifications.62.5% presented intranodular vascularity pattern. All nodules scored 5 in TIRADS scale. 95.5% of adenomas had oval shape and 63.6% presented a halo sign. Only 4% contained microcalcifications.TIRADS scores were heterogenous.
Conclusions: Most of neoplastic nodules were described as hypoechoic and solid. Many presented alarming features like peripheral halo or microcalcifications. The assessment of traits included in TIRADS scale is crucial, as it allows to correctly predict the character of suspicious nodule.

Keywords: Thyroid USG, Thyroid nodules, Thyroid cancer

AN UNUSUAL CASE REPORT OF ANOREXIA NERVOSA

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Background: Anorexia Nervosa (AN) is a psychiatric disorder characterized by an abnormally low Body Mass Index (BMI), self-induced starvation due to an intense fear of obesity, and a distorted perception of weight. If left untreated, it can lead to serious physical and psychological complications including cardiac problems, infertility, and even death.
Case Report: An 18-year-old woman was examined by the endocrinology department for secondary amenorrhea. Her menstruation had started at 12 years old. After being close to obesity for the first 14 years of her life, she had been dieting for the past 4 years and her current BMI was 12,3 kg/ m?. The patient was diagnosed with AN. Hypotension, bradycardia, electrolyte imbalance, severe depression were all indications for hospital admission. Blood investigations revealed low levels of sex hormones and gonadotropins. The case was managed through a multidisciplinary team comprising endocrinologists, psychiatrists, psychologists, and dieticians. During hospitalization, the patient's condition initially worsened, while vitamins, food supplements oral contraceptive pills containing supraphysiologic doses of estrogen proved to be ineffective. Only when the fear of death overcame her obsessions, she found in herself the resources to fight anorexia. Consequently, her weight gradually increased, and she began menstruating again after 3 years.
Conclusions: The particularity of this case resides in the patient's complete awareness of her condition and of all the risks involved, thus making the psychological intervention an insignificant one. Stuck between the fear of food and that of dying, this patient learned to fight against herself to redefine her entire way of living.

Keywords: Anorexia Nervosa, self-induced starvation, secondary amenorrhea, multidisciplinary team

REVIEW OF THE ROLE OF SGLT-2 INHIBITORS IN RENAL AND CARDIOVASCULAR PROTECTION

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Introduction: Type 2 diabetes mellitus (T2DM) is a growing public health concern worldwide. Inhibitors of the sodium-glucose cotransporter 2 (SGLT2) are a new class of blood glucose lowering medications that block renal glucose reabsorption and have protective effects on the kidney and the heart. These drugs may also lower many other renal and cardiovascular risk factors such as body weight, blood pressure, albuminuria and uric acid.
Methods: The aim of the study is to present the current state of knowledge on the assessment of the role of SGLT-2 inhibitors in renal and cardiovascular protection. The analyzed data is based on a literature review from 2018-2019 on PubMed and Google Scholar platforms.
Results: SGLT2 inhibitors are widely used for the management of T2DM and have effects beyond glucose lowering that include cardiovascular benefits and potential nephroprotective effects. These agents can reduce the risk of development or worsening of albuminuria, a marker of renal damage, through lowering blood pressure, reduction of intraglomerular pressure and hyperfiltration, modification of inflammatory processes, reduction of ischemia-related renal injury, and increases in glucagon levels. A study conducted by Zelniker's team showed that SGLT2 inhibitors reduced major adverse cardiovascular events by 11%, risk of cardiovascular death or hospitalisation for heart failure by 23% and also risk of progression of renal disease by 45%.
Conclusions: The beneficial effects of SGLT2 inhibition extend beyond glycaemic control. New studies demonstrated that inhibition of renal glucose reabsorption reduces blood pressure, ameliorates glucotoxicity and induces haemodynamic effects that lead to improved cardiovascular and renal outcomes in patients with T2DM.

Keywords: SGLT2 inhibitor, type 2 diabetes mellitus, renal insufficiency

PROLACTIN SECRETING MICROADENOMA

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Background: A prolactinoma is a benign (noncancerous) tumor of the pituitary gland that produces a hormone called prolactin (PRL) and it is the most frequently type of functioning pituitary tumor. Based on its size, the tumor can be: microprolactinoma (<10mm) or macroprolactinoma (>10mm). The women are experiencing amenorrhea, galactorrhea and hypogonadism, which are caused by too much prolactin in the blood (hyperprolactinemia). The symptoms that are caused by mass effect are: headaches, vision changes-visual field deficits, blurred vision, decreased visual acuity.
Case Report: We present a case of a 35 year-old woman who came to our hospital accusing galactorrhea and amenorrhea (infertility). Dosing the hormones was the first step where the levels of prolactin were very high: 45 µg/L (10-25 µg/L). After that, a head MRI was required to confirm our suspicion. A tumoral mass was found on the anterior lobe of the pituitary gland (?4mm). Based on its dimension, location and the high level of PRL the diagnosis of microprolactinoma was set. As no surgical treatment is needed, Cabergoline is administered (dopamine agonist D2) 2 doses/ week each with 0.5-1mg which after few days PRL levels as well as the dimensions of the adenoma will decrease
Conclusions: The clinical course of this patient was pretty simple; usually patients with microprolactinoma generally have an excellent prognosis, but macroprolactinomas often require surgical treatment otherwise they continue to grow and lead to other complications.

Keywords: galactorrhea, amenorrhea, MRI, infertility, PRL, microadenoma, carbegoline, pituitary gland

RECURRENT HYPOGLYCEMIA WITH UNDETECTABLE INSULIN LEVEL IN ADULT PATIENT WITH DIABETES MELLITUS TYPE 1.

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Background: Factitious hypoglycemia refers to low blood glucose level induced by covert, purposeful activity of a patient which may involve exogenous insulin or insulin secretagogues administration. It is one of possible representations of factitious disorder imposed on self, formerly known as Munchausen syndrome.
Case Report: A 35-year-old man, diagnosed with DM1 at the age of 19, after extensive evaluation was sent for total pancreatic resection due to frequent symptomatic hypoglycemia. After reconsultation the surgery was postponed with request of further evaluation. Hypoglycemic episodes, experienced several times a week, were documented during monitored fasting tests which showed undetectable or very low insulin and c-peptide levels. This raised suspicion of neuroendocrine tumour. The patient used an insulin pump, however, his demand for insulin was gradually decreasing to such extent that eventually it was no longer needed. Nevertheless, hypoglycemic episodes still occurred. The patient underwent numerous imaging tests, the results of which were normal. Only ultrasonographic endoscopy revealed possible mass (or lymph node) near the pancreas' tail. The patient was suspected of self-injecting insulin analogues undetectable in the method used (Roche Elecsys assay). Afterwards, insulinemia was checked by Siemens analyser which detected significant levels of insulin. When the patient ran out of insulin analogues he started injecting human recombinant insulin which was detected also by Roche analyser. The diagnosis of factitious disorder imposed on self was made.
Conclusions: During hypoglycemia evaluation it is important to use various automated methods to detect insulin analogues. Also, the reason for inadequate insulin intake in diabetic patients should be analysed cautiously.

Keywords: hypoglycemia, factitious disorder imposed on self

IS THERE ANY LINK BETWEEN CORONAVIRUS DISEASE 2019 (COVID-19) AND AUTOIMMUNE THYROIDITIS? A CASE REPORT.

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Background: The main complications reported in patients diagnosed with coronavirus disease 2019 (COVID-19) may include acute respiratory failure, cardiovascular complications, coagulopathy, and endocrine disturbances including subacute thyroiditis; however, it remains unclear whether these patients may develop the higher risk of autoimmune thyroiditis.
Case Report: In early April 2020 a previously healthy 43-year-old female experienced headache, anosmia, asthenia, myalgia with no other symptoms. Her laboratory exams confirmed COVID-19 (qRT-PCR for SARS-Cov-2). The patients was treated symptomatically for her mild disease and improved completely in the following days. At the beginning of June the patient started to complain of chronic fatigue, weight gain, and dry, coarse skin. Due to the presence of general symptoms suggesting hypothyroidism, thyroid function was evaluated (two years before TSH level was 0.98 mIU/L, and anti-thyroid antibodies were negative). The lab results confirmed hypothyroidism (TSH 12.3 mIU/L, fT4 0.78 ng/dL) in the course of autoimmune thyroiditis (both anti-thyroid peroxidase and anti-thyroglobulin antibodies were elevated). There was a negative family history of any autoimmune disorders. The ultrasound scan revealed homogenous hypoechogenicity of the thyroid gland. The levothyroxine therapy was commenced. At the beginning of October TSH and fT4 were within the reference values (TSH 1.31 mIU/L, fT4 1.22 ng/dL, on the dose of 88 ?g of levothyroxine) with a relief in general symptoms.
Conclusions: The current evidence that COVID-19 may trigger the development of autoimmune thyroiditis is still very limited; however, physicians need to carefully screen patients with a past infection of COVID-19 to identify possible long-term complications including autoimmune disorders.

Keywords: coronavirus, COVID-19, autoimmune thyroiditis

THE ATHEROGENIC INDEX OF PLASMA (AIP) AS A POSSIBLE SIMPLE DIAGNOSTIC TOOL FOR AN IDENTIFICATION OF INSULIN-RESISTANT FEMALES WITH POLYCYSTIC OVARIAN SYNDROME

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Introduction: Metabolic phenotype of polycystic ovarian syndrome (PCOS) is associated with the accelerated atherosclerosis resulting in cardiovascular diseases development. Insulin resistance (IR) is diagnosed in 40–70% of PCOS females, whereas about 70% of PCOS females reveal lipid management disturbances in the form of increased triglycerides concentration and HDL-cholesterol decreased. Aim of the study was to investigate the relation of HOMA-IR index (the homeostatic model assessment) to arterial pressure values as well as the atherogenic index of plasma (AIP) in 45 PCOS females with normal fasting glucose.
Methods: The females were divided into two groups matched for age and body-mass index. Insulin-resistant females (n=28) were compared with subjects presenting normal sensitivity to insulin (n=17). All the females presented no subjective feeling of any disease, and admitted no drug treatment for any condition. Serum insulin levels were assessed by the enzyme-linked immunosorbent assay. HOMA-IR index was used to estimate insulin resistance. Insulin-resistant participants were defined as HOMA-IR higher than 2.5. AIP defined as log [triglycerides/high-density lipoprotein-cholesterol] was calculated.
Results: The AIP was significantly higher in insulin-resistant subjects: median=0.43/interquartile range(IQR)=0.16 vs. median=0.31/IQR=0.21; p=0.004. Both systolic (median=135mmHg/IQR=19.5 vs. median=121mmHg/IQR=19; p=0.02) and diastolic (median=79.96mm/Hg/IQR=12 vs. median=73.9mmHg/IQR=9, p=0.01) blood pressures were significantly elevated in the insulin-resistant group.
Conclusions: The correlations between HOMA-IR, the AIP and blood pressure suggest that the AIP may be used as a simple diagnostic tool for an identification of insulin-resistant obese subjects who are at higher risk for arterial hypertension development. However, the conclusion should be confirmed in further studies on a larger group of patients.

Keywords: "polycystic ovarian syndrome", "atherogenic index of plasma", "diagnostic tools", "insulin resistance"

General Surgery

TREATMENT OF DIABETIC FOOT SYNDROME WITH NON HEALING WOUNDS

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Introduction: One of the problems of a long wound healing in patients with diabetic foot syndrome (DFS) is contamination by microflora formed into biofilm promoting the development of inflammation and pyodestructive processes in the wound.
Methods: 75 patients with DFS were treated. Group I included 38 patients, whose comprehensive treatment was conducted with intratissue electrophoresis (ITE) with current strength of 0,05-0,1 m?/cm2during 5-8 days. Antibiotic and antiseptic susceptibility was determined preliminary, and the medicine was administered to which inoculated wound microflora was susceptible. Group II - 37 patients received standard methods of wound d-bridement.
Results: In the main group the term of exudative and proliferative phase of the wound process became rather shorter as well as epithelization of the wound and its healing. An average period of wound healing in patients from the main group was 18,7±2,75 days, in the group comparison – 28,7±2,83days. General microbial contamination of wounds before treatment was 5,2±0,17 lg CFU/cm3, and after 5 sessions of ITE was 2,9±1,47 lg/cm3. The amount of bacteria per 1 cm2 of the biofilm square before treatment was 5,98±0,19*106, after ITE – 3,51±0,14*104 (?<0,001). An average term of wound cleansing from microorganisms in patients of the main group was 8,3±1,74, while in the group of comparison it was 15,4±2,38 days.
Conclusions: Application of combined effect of electric direct current and medicinal agent in a comprehensive treatment of patients with DFS provides elimination of wound from microflora, destroys bacteria biofilms, decreases the signs of inflammation and stimulates wound healing, which shorten treatment terms.

Keywords: diabetic foot syndrome, intratissue electrophoresis, microbial biofilms

SUCCESSFUL TREATMENT OF A LARGE RENAL CALCULUS IN PATIENT WITH DOUBLE RIGHT KIDNEY

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Background: Renal calculus it is a severe disease which can be accompanied by wide variety of complications like in a patient with double right kidney in this case report.
Case Report: A 57-year-old patient was admitted to the Urology Department of the Lugansk Regional Hospital with complaints: acute, paroxysmal pain in the right lumbar region, hematuria, and weakness. Urological examination: kidneys areas were without visible deformities, the kidneys were not palpable, right kidney painful on palpation. Ultrasound test: the left kidney was intact; the right was 127×53 mm of size, parenchyma was 19 mm thick. In the lower calix, the stone was revealed 46 mm of size; in the upper calix, there was a stone sized 6×5 mm. SCT: the right kidney is doubled. In the upper and middle groups of calices the stone is 29×10×33 mm was found, and the middle and lower calices housed the stone sized 13×13×28 mm. In surgery room under general anesthesia cystoscopy with catheterization of the right ureter was performed, as well as percutaneous laser contact nephrolithotripsy on the same side. During percutaneous laser contact nephrolithotripsy, a right kidney was punctured and urine was obtained. A nephrostomy was performed, the canal was widened by means of Seldinger technique, and a nephroscope with a laser fiber was inserted. The stone was fragmented. The fragments were evacuated by endo-scopic forceps and washed.
Conclusions: This particular case highlights that the most effective treatment for patients with large renal calculus and double kidney - percutaneous laser contact nephrolithotripsy.

Keywords: Calculus,kidney,surgical treatment

PER ORAL ENDOSCOPIC MYOTOMY (POEM) AT THE TREATMENT ACHALASIA EOSOPHAGUS

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Introduction: Peroral endoscopic myotomy (POEM) is a novel approach for the treatment of achalasia at the Ukrainian patients. This abstract aim to assess, safety and efficacy endoscopic approach for the treatment achalasia. Surgical myotomy is considered the gold standard treatment achalasia, however, peroral endoscopic myotomy (POEM) seems to be a safe and effective alternative option.
Methods: we performed 10 POEMs for the patients with different types of the achalasia from May until October during the 2019 year. At the all cases we used Eckhart's score, X-ray and endoscopic Ling classification evaluated for type achalasia. According Ling endoscopic classification 7 patients had Ling IIa type and 3 patients had Ling IIIL. type. Patients were undergoing general anesthesia, supine position. Submucosal injections were made at the 30 sm from incisors to the posterior wall of esophagus. Then we formed a submucosal tunnel, an average length of 12-14 sm. Myotomy was started on 2 sm below the entrance to the tunnel and continued below 2 sm from LES. Selective circular myotomy was done in the upper part of the tunnel and full-thickness myotomy towards the lower part of the tunnel. After myotomy, esophageal mucosal incision was closed clipped.
Results: All patients after underwent POEM noted reduction clinical dysphagia, regurgitation and vomiting. The median postoperative Eckardt score was 0 (range 0-6) follow up period was 60 days. The postoperative period of staying in the clinic was averaged 5-6 days. Postoperative antibiotic prophylaxis was required for 3 patients with clinical symptoms of intense carboxiperitoneum and increase body temperature.
Conclusions: We received the excellent results after POEM without seriously complications, so we can recommend POEM as method of choice endoscopic treatment achalasia. But this method requires further research and improvement.

Keywords: Eosofagus, achalasia, POEM.

MALNUTRITION AND ITS CONSEQUENCES AS SERIOUS COMPLICATIONS OF ILEOSTOMY.

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Background: Colonic diverticula are the prominences of the mucosa through the muscular membrane of the colon. They most often appear in the sigmoid colon. In case of surgical treatment of diverticulitis complications (e.g. perforation, intra-abdominal abscess), there is sometimes a need to perform an ileostomy.
Case Report: A 68-year-old female patient was admitted on 22.04.2020 to the General Surgery Clinic with diagnosed colonic diverticula. Based on the tests and medical history, there was made a diagnosis of complicated diverticulitis of the sigmoid colon. Conservative treatment was implemented, resulting in an improvement of patient's clinical state. Previous symptoms have come back in the 16th day of hospitalization. The patient was qualified to surgical treatment. During the surgery, perforation of the ileal wall and numerous abscesses were found. As a result a partial resection of the small intestine and ileostomy was performed. After returning to the surgical clinic, oral nutrition was gradually implemented, after which the patient reported from several to a dozen bowel movements a day. After a few days of treatment the patient was discharged home. In august, she returned to the hospital with acute renal failure, pancreatitis, anaemia and electrolyte disturbances. Her condition could result from the maladjustment of the oral nutrition to the resorptive capacity of the gastrointestinal tract. Finally, the patient was referred to a nutritional treatment clinic and qualified for parenteral nutrition.
Conclusions: There should be provided an adequate nutrition to the patient after ileostomy, to avoid serious complications. Restoring digestive tract continuity and implementing oral nutrition will be possible only after patient's stabilization on parenteral treatment.

Keywords: colonic diverticula, peritonitis, ileostomy, short bowel syndrome, nutritional treatment

PROXIMAL GASTRECTOMY: A REASONABLE SOLUTION IN EARLY-STAGE PROXIMAL GASTRIC NEUROENDOCRINE CARCINOMA. ACCOMPANIED BY VARIOUS COMORBIDITIES

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Background: Neuroendocrine carcinoma behaves as a very aggressive tumor , particularly when accompanied by various comorbidities. Proximal gastrectomy is considered to be less vulnerable in high-risk patients.
Case Report: A 45-years old lady with of known history of mild mitral insufficiency , sequelae of pericarditis , microcytic anemia , subclinical hypothyroidism and first-degree internal hemorrhoids , was admitted with acute upper gastrointestinal bleeding to the emergency department . A tumor mass was revealed in the greater gastric curvature and confirmed as neuroendocrine carcinoma . The post-operative barium swallowing examination revealed a permeable esophago gastric anastomosis without contrast leakage . The uneventful post-operative evolution allowed the patient to be discharged on the 10 th day.
Conclusions: Proximal gastrectomy might be an elective choice in early-stage proximal gastric cancer, particularly if accompanied by pre existing risk factors . The end-to end esophago gastric anastomosis maintains a relatively physiological gastrointestinal tract with the remnant stomach . We attempted the proximal gastrectomy techniques with omentectomy . D1+ lymphadenectomy , and the mechanical end-to-end esophagogastrostomy .

Keywords: neuroendocrine carcinoma, proximal gastrectomy , esophagogastronomy, comorbidities

OVERVIEW OF THE PATIENTS WITH HEPATOCELLULAR CARCINOMA: TREATMENT OPTIONS

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Introduction: For the diagnosis of hepatocellular carcinoma (HCC) is highly recommended to use the imaging studies and the Child-Pugh score. The acquired information is used in the current staging system for HCC and the following option of treatment for every patient, based on the Barcelona Clinic Liver Cancer (BCLC) guidelines.
Methods: This study included 45 patients with HCC who were treated in Pauls Stradinš Clinical University hospital in the period starting from January 2015 till Augusts 2019. The diagnosis of HCC was based on radiological, histological criteria and/or biochemistry.
Results: The common age of HCC patients: 55-64 years, with a predominance of men (80%). The risk factors were detected for 27 patients (n=27): liver cirrhosis - 26%, hepatitis C virus (HCV) infection - 18% and as well as their combination - 48% (other risk factors were in 8%). Child-Pugh score was perceived for 24 patients (n=24): 12 patients had Class A, 8 patients - Class B, 4 patients - Class C. The HCC staging based on TNM classification was performed for operated patients (n=21). Analyzing total number of patients (n=45), 21 patients had received primary operative intervention, 17 patients - non-operative treatment, 2 patients - liver transplantation and 5 patients had not received treatment.
Conclusions: Concluding the received data of the research, the most common risk factors were liver cirrhosis and HCV as well as their combination. The patients with HCC could receive all types of the possible treatment.

Keywords: HCC, Child-Pugh score, treatment strategy

THE IMPACT OF BARIATRIC SURGERY ON OBESITY-RELATED COMORBIDITIES

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Introduction: Modern medical knowledge considers obesity as a part and cause of metabolic syndrome, which is connected with increased cardiovascular disease morbidity and mortality.
Methods: Retrospective cohort statistical analysis of clinical data (211 patients, after LSG operation), collected during follow-up visits.
Results: In the examined group, average BMI was over 40 kg/m2, 85,6% out of this group suffers from AH for at least 10 years. 55,92% of operated patients had NIDDM. Average values of lipid fractions (TC, LDL, TG) were above the norm, as long as HDL fraction was within reference limits. Our patients underwent the Laparoscopic sleeve gastrectomy (LSG) operation and were followed up in the 1st, 3rd, 6th and 12th month after surgery. During the last follow up, average BMI was 30,37 kg/m2. Based on annual observation, 20,19% of patients with AH, were diagnosed with partial remission, and 3,85% -total remission. As long as NIDDM is concerned, 35,59% of them achieved partial, and 12,71% total remission. After the whole follow up period, average values of all lipid fractions were within the norm.
Conclusions: The constantly increasing prevalence of obesity has evolved to the scale of pandemic and provoked clinical research that led to the understanding of obesity as disease complex which is treatable, what our research proves. It shows, that in obese patients' metabolic diseases treatment, bariatric operation results in partial or total remission of them in majority of cases.

Keywords: obesity, BMI, metabolic syndrome, Laparoscopic sleeve gastrectomy, LSG

MORGAGNI HERNIA

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Background: It is one of the rarest types of diaphragmatic hernias with an incidence of 2-3%, wich commonly presents with non-specific symptoms. Is a retrosternal / parasternal hernia which occurs through the Morgagni foramen adjacent to xiphoid process. Morgagni hernias are: - Anterior - Most often right sided (~ 90%) - Small - Rare (2% of CDH) - At low risk of prolaps
Case Report: A rare case of Morgagni hernia discovered accidentally due to an episode of acute cholecystitis which required immediate surgery. -Patient's age: 89 years old (female) : -Symptoms : abdominal pain in the left flank and periumbilical, nausea, absence of bowel movement and fever (38°C) - On examination of the abdomen we can feel the rim of the liver at the umbilical level and a tumor of approximative 15 cm diameter, painful on palpation and absent bowel movement on auscultation. -After surgery she remained in ICU for 6 days. On the 7th day postoperative she was transferred in our clinic feeling much better with regaining her bowel movement, minimum secretions on the pleural drain. On the 10th day postoperative a chest x-ray was made and the pleural drain was removed. After this the patient was discharged.
Conclusions: Although rare and usually asymptomatic, hernia of Morgagni requires surgery because it can lead to severe complications, especially when the herniary sac contains small intestines or colon.

Keywords: Rare, Cholecystectomy, Cholecystitis, Hernia, Morgagni

ABDOMINAL AORTA CALCIFICATION AS A RISK FACTOR OF COLORECTAL CANCER OPERATION MORBIDITY IN ELDERLY PATIENTS AND TOOL OF FRAILTY EVALUATION

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Introduction: In 2019 for the first time in the history the group >65 was larger than <5 years old. This group account 50% of cancers and 2/3 of cancer deaths. Significant part of this group suffer from frailty syndrome which is a state of increased vulnerability and reduced resistance for stressors. Abdominal aorta calcification (AAC) measurement is considered as possible tool to evaluate frailty and risk of morbidity. The aim of the study is to validate AAC as a risk factor of postsurgical morbidity and to check the usefulness of AAC as radiological tool of frailty evaluation.
Methods: AAC measurement is based on non-contrast preoperative CT. Calcification measurement results are presented with: % of calcified area, Agatston Score (AS) and AS/length of the segment (AS/l). Patients operated on at the secondary care hospital at the age of 60 and more years due to colorectal cancer.
Results: 122 patients were included into the study. Two patients were excluded due to abdominal aorta aneurysm and two because CT was taken postoperatively. The result indicate that AAC based on AS (OR =1.32) and AS/l (OR=1.61) is a risk factor od 30-day morbidity and 30-day major morbidity (AS OR=2.34; AS/l OR=2.26). The most important risk factor of morbidity is frailty based on Comprehensive Geriatric Assesement (OR=4,21), not AAC.
Conclusions: The study prove the AAC measurement is a valuable tool for morbidity risk assessment. Relation between AAC and frailty is yet ambiguous and requires further investigation.

Keywords: abdominal aorta calcification, frailty syndrome, colorectal cancer surgery, elderly patients

THE BIOPLASTIC MATERIAL USAGE FOR CHILDREN BURNS TREATMENT: LONG-TERM RESULTS.

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Introduction: «?ollost» – is a high molecular weight compound, which related to collagen type I, obtained from the skin of cattle, processed in such a way that the epidermis, adipose tissue and all dermal cells are without disturbances of the collagen matrix, creating non-immunogenic, inert material, in its composition and structure as close as possible to human collagen.
Methods: An observational study of the long-term results of treatment of burn wounds of II-III (according to ICD-10) degree after the use of bioplastic collagen material "Collost" in the form of molds (7% gel, membranes, powder) and traditional conservative therapy with hydrocolloid dressings was carried out. The condition of the healed wound was assessed at discharge, as well as after the 1st and the 6th months among 48 patients at the age of 1 with mosaic burns mainly II-III degree of burns according to ICD-10. Calculations of relative risk (RR), relative risk reduction (RRR), absolute risk reduction (ARR), the number of patients who need to be treated to prevent 1 adverse outcome (NPNT) were performed.
Results: The RR and NPNT in the powder and membrane group were the lowest in relation to the 7% gel group after the 1st month of research. However, in the 7% gel group, the RR and NPNT were lower than into powder and membrane after the 6th month of research (more distant period, indicating a more effective form for preventing the development of scar tissue.
Conclusions: The analysis of the results obtained shows the high efficiency of bioplastic collagen material not only as a medical device for wound healing (the formation of full-fledged integumentary tissues), but also for the prevention of post-burn scars or more favorable maturation of scar tissue.

Keywords: thermal burn, children, wound, scar, collagen, Collost.

UNUSUAL CASE OF SIGNET RING CELL BREAST CANCER METASTASIS TO THE STOMACH RESEMBLING GASTRIC CANCER

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Background: Breast cancer has one of the highest incidence rates worldwide and it can metastasize to different locations like bones, lungs, liver and brain. Metastasis to the stomach are uncommon and the diagnosis can be complicated by its morphological resemblance to primary gastric cancer. A case of 75-year-old woman with infiltrative lobular breast carcinoma metastasis in stomach which is resembling primary signet ring cell gastric cancer is presented in this report.
Case Report: A 75-year-old female presented to Pauls Stradins Clinical University Hospital, Riga, Latvia, with complaint of epigastric pain and discomfort. The patient was referred to gastroenterology by her primary care physician and had esophagogastroduodenoscopy (EGD) performed. The EGD revealed diffuse infiltration of signet ring cell carcinoma complexes in gastric mucosa. The samples were cytokeratin 7 (CK 7), progesterone receptor (PR) and estrogen receptor (ER) positive. On the basis of these findings, the diagnosis was thought to be a signet ring cell gastric carcinoma, but pathologist draw attention to possible origin from breast tissue. The patient was referred on further breast examination, which discovered poorly differentiated infiltrative lobular breast carcinoma.
Conclusions: This case showed unusual breast cancer metastasis to the stomach resembling primary gastric cancer. In a case like this, it is important to distinctive primary site of disease, as the treatment options and overall prognosis are different.

Keywords: Metastatic breast cancer, signet ring cell carcinoma, immunohistochemistry.

A GIANT CYST OF UNKNOWN ORIGIN

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Background: Intra-abdominal cysts constitute clinical entities with a malignant potential. Their size can govern their clinical presentations with smaller ones being usually silent and the larger cysts can present with mass effects or intracystic pathologies. The biggest challenge in such a case is the likelihood of misdiagnosing the patient. Thus, complete history, careful workup and investigations are imperative in the management.
Case Report: A 45y/o male presented with chief complaints of fullness in the left side of the abdomen since the last 15 days. He had no history of dysphagia, fever or trauma. Haematological investigations were benign, as were the Liver function tests and pancreatic amylase. Catecholamine estimation was normal. Upon ultrasonography, a huge heterogenous mass in the left hypochondrium extending into the left flank was seen. After a normal chest X-ray and ECG; proper consent for nephrectomy, splenectomy and pancreatectomy, an exploratory laparotomy was initiated with an incision from the xiphisternum till the left flank of the abdomen. An adrenal cyst of size 20cm in diameter was found lying in the retroperitoneum, pushing the left kidney inferiorly- so much so that it was folded upon itself. The mass was separated from adjoining structures and removed én-bloc.
Conclusions: The rarity of the condition makes it a diagnostic dilemma such that the approach is via exclusion. It is usually confused with other retroperitoneal masses due to its low incidence. Laparotomy is gold standard in these cases but may be challenging with respect to the size of the mass and blood amount.

Keywords: cyst, diagnostic dilemma, diagnosis by exclusion

Gynaecology and Obstetrics

VESICOVAGINAL FISTULA AS COMPLICATION AFTER VAGINAL HYSTERECTOMY

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Background: Vesicovaginal fistulas-connections between the urinary bladder and vagina, resulting in an involuntary discharge of urine through the vagina. Nowadays, surgical treatment of vesicovaginal fistulas is difficult task.
Case Report: A 46-year-old woman was admitted to the Lugansk Republic Hospital with the following complaints: excessive leakage of urine through the vagina. Condition after vaginal hysterectomy with the left fallopian tube, when the bladder was damaged, vesicovaginal fistula was formed and stricture of the intramural section of the right ureter. Ultrasound - cavities of the left kidney are free, the pelvis of the right kidney is up to 45×50 mm, cups - up to 20 mm. Cystoscopy - a defect in the bladder in the region of the Lieutaud's trigone 15×20 mm medial to the left ureteric orifice. Ultrasound - about 500 ml of free fluid in the lesser pelvis. In operation room: renewal of vesical-ureteric junction and transvaginal suturing of the vesicovaginal fistula. Using vaginal approach by the external opening of the fistula, an incision of the vaginal wall was made; the vaginal wall was separated from the bladder, cicatrical tissue was removed until a distinctly unchanged tissue of the bladder wall appeared. The defects in the bladder wall and the vaginal wall were sutured. For control purposes, 200 ml of furacilin was injected into the bladder; no leakage from the fistula was detected.
Conclusions: The most effective is a surgical procedure that employs transvaginal approach in the case of uncomplicated disease while complications like ureter damage may require transvesical approach.

Keywords: Fistula,surgical treatment,complication

INFLUENCE OF GESTAGENS USED IN HORMONAL CONTRACEPTION AND BODY MASS INDEX ON MENTAL AND SEXUAL SIDE EFFECTS

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Introduction: Hormonal contraception is currently one of the most commonly applied methods for preventing pregnancy. Medical products containing estrogen and progesterone components are also used to regulate the monthly cycle and to alleviate undesirable symptoms associated with it, as well as to treat other hormonal disorders. The main aim of the research is to collect the most common adverse effects focused on the area of mental and sexual health among women between ages 17 and 55 who use or once used hormonal contraception.
Methods: Our research relies on a detailed survey, divided into five sections. 629 respondents who use or once used hormonal contraception took part in it. Women were divided into subgroups depending on the type of gestagen component of the medication used as well as BMI.
Results: Among women who took part in the survey 65,2% used the combined hormonal pill, 18,7%- progestin-only pill. Most commonly mentioned side effects were dicrease in libido (40,6%) and mood swings (39,3%).Women who took medications containing desogestrel experienced the least side effects (70% admitted negative side effects) and the most- women who took specifics with etonogestrel (91,6%). Difference is also seen depending on the BMI of questioned women.
Conclusions: Hormonal contraceptives have an impact on mood and both mental and sexual health of the majority of women who took part in the survey. Frequency of chosen side effects vary depending on gestagenic component and woman's BMI.

Keywords: contraception, mental health, sexual health, estrogen, progestin

PRENATAL DIAGNOSIS OF ADRENAL NEUROBLASTOMA

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Background: Neuroblastoma is the most common solid extracranial tumor in infancy with an incidence rate of 58 per million infants younger than one year old. Neuroblastomas originate from the neural crest during fetal development and may arise from the sympathetic ganglia or the adrenal medulla. We present the case of a cystic neuroblastoma of the left adrenal gland that was detected prenatally during a routine antenatal visit.
Case Report: A 27-year-old pregnant woman, Gravida 2 Para 0 Abortus 1, visited the maternity hospital during the third trimester of her pregnancy. The gestational age of the pregnancy was 38 weeks and 2 days with an uneventful past medical history. During the initial ultrasound examination all growth parameters, including the Amniotic Fluid Index, were within normal limits. During the scan a well circumscribed mass was detected over the left kidney, appearing to have both cystic and solid areas originating from the left adrenal gland, measuring 4.40 x 4.12cm. Doppler evaluation did not reveal increased blood flow in the mass. Extensive ultrasound examination revealed no other anomalies and the diagnosis of cystic adrenal neuroblastoma was established by transabdominal ultrasound. Taking into consideration the gestational age of the pregnancy, induction of labor was programmed at 39+1 weeks, resulting in the birth of a male neonate with APGAR score 9 in the first minute. The neonate was transported to the pediatric oncology department where it was subjected to abdominal MRI and urine Vanillylmandelic acid and Homovanillic acid tests which confirmed the diagnosis of neuroblastoma.
Conclusions: Early detection of neuroblastomas is very important since treatment of low stage disease results in favorable oncologic outcomes. The evolution of imaging techniques has allowed earlier detection of fetal tumors. Evaluation by a maternal – fetal medicine specialist is essential for the proper management of the case.

Keywords: Neuroblastoma , ultrasound, prenatal diagnosis

PREGNANCY AFTER LIVER TRANSPLANT: MATERNAL AND PERINATAL OUTCOMES

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Introduction: Liver transplantation is a life-saving and successful therapeutic procedure which is more and more frequent worldwide, also among women of reproductive age. Consequently, there is an increasing number of reports of pregnancy following liver transplantation, but doubts still exist regarding preconception counseling and the the optimal method of managing pregnancy.
Methods: We retrospectively analyzed female patients after orthotopic liver transplantation who reported pregnancy and were under medical care of one transplant center.
Results: We identified 13 pregnancies in 10 women who had undergone a liver transplant (12 childbirths and 1 induced abortion due to fetal death in I trimester). The most common indication for liver transplantation was autoimmune hepatitis (50%). The mean age at transplant was 28,5 years (range 21-36), mean maternal age at pregnancy was 32 years (range 26-43), and transplant-to-pregnancy interval was 4,07 years (range 1,5-7). The mean gestational week was 36,67 (range 31-40). Immunosuppression was maintained with combinations of prednisone (n=11), tacrolimus (n=13), and azathioprine (n=8) prior to and during pregnancy. No maternal death was registered. Maternal complications included increase of aspartate transaminase and alanine transaminase (n=2), anemia (n=4) and hyperthyroidism (n=2). Among the 12 total childbirths, 5 (41,67%) were preterm. Only 5 women entered labor spontaneously, while 7 (58,33%) presented cesarean delivery.
Conclusions: Pregnancy after liver transplantation can achieve relatively favorable outcomes. Liver transplant does not influence women's fertility and during pregnancy, we report low rates of minor graft complications. Multidisciplinary team should be involved in contraceptive, fertility and consequently pregnancy counseling of female transplant recipients.

Keywords: liver transplantation, OLTx, pregnancy, labour

APPLIANCE OF DONOR NITROGEN OXIDES IN THE PROGRAMS OF IN VITRO FERTILIZATION AS PREPARATION ENDOMETRIUM FOR IMPLANTATION.

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Introduction: In vitro fertilization (IVF) is one of the most modern and promising methods of infertility treatment. The issue of improving the efficiency of IVF is especially relevant. The aim of the work was to prepare the endometrium for implantation in IVF programs in women with thrombophilia by correcting coagulopathy disorders and dysfunction of endothelium (DE) with the help of a developed scheme of pathogenic therapy.
Methods: The study included 80 women with previously failed IVF attempts and thrombophilia. All women were divided into 2 clinical groups. 1 group included 50 women, who 3 weeks before IVF underwent pathogenic therapy for thrombophilia and correction of DE with nitric oxide donors (L-arginine hydrochloride 100 ml once a day for 10 days intravenously, followed by switching to the oral form of "Tivortin aspartate" 5 mg 3 times a day for 1 week); Group 2 - 30 women with thrombophilia were prescribed only pathogenic therapy of hemostasis defects.
Results: Preparation of the endometrium before the IVF program confirmed the high efficiency of pathogenic therapy of thrombophilia and ED. The 1st group members were treated with nitric oxide donors after IVF, pregnancy occurred in 38 (60%), patients of the 2nd group had positive IVF results only in 8 (26.6%) occasions.
Conclusions: Our results indicate a high efficiency of endometrial preparation before IVF using the developed scheme of pathogenic therapy using nitric oxide donors, aimed at correcting hemostasis defects and DE.

Keywords: In vitro fertilization, nitric oxide donors , thrombophilia , endometrium preparation

EXPECTATIONS WHEN EXPECTING. A STUDY INVESTIGATING WOMEN'S EXPECTATIONS AND EXPERIENCE REGARDING CHILDBIRTH.

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Introduction: Childbirth is undeniably considered one of the most momentous, yet challenging events in a woman's life. The aims of the study were to establish expectations regarding childbirth among women of different ages (multiparous and nulliparous) and to detect whether the expectations were met in the actual course of labour.
Methods: The study was conducted amongst 164 women of three different age groups between November 2019 and January 2020. The research method used was a diagnostic survey and the tool was an original questionnaire. The questionnaires were completed both online and in person by patients from the 2nd Department of Gynaecology and Obstetrics, University Clinical Hospital in Wrocław. All the data collected was further analysed.
Results: The survey results showed that approximately 48% of questionnaire respondents had particular expectations regarding childbirth. Allowing the patient to be accompanied during both natural and caesarean delivery was a significantly high priority. Additionally, sharing information and updates during the course of labour as well as continuously mentioning non-pharmaceutical pain relief methods was in high demand. Overall, 75% of women who gave birth in the past were content with the delivery, even though their experience did not always meet their expectations.
Conclusions: The study proved that even though our respondents considered their experience of childbirth satisfactory, the majority of women would like to be able to decide on the medical procedures they undergo and medication administration during labour. Furthermore, the physicians are expected to provide all the adequate information and knowledge.

Keywords: pregnancy, delivery, childbirth, expectations, survey

DIAGNOSIS PROBLEMS REGARDING A CASE WITH ACUTE PELVIC PAIN

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Background: Ovarian fibroma represents 4% of all ovarian neoplasms. They tend to occur mostly during perimenopause, the median age having been reported to be about 52 years. Extrauterine fibromas present greater diagnostic challenge. Ovarian torsion represents the fifth most common gynaecological emergency.
Case Report: A 49 year old woman was admitted to “Cuza Vodă” Hospital Iasi with pain in the left iliac fosa. The symptom occurred two weeks before, with great intensity. Vaginal examination revealed a fixed uterus with increased dimensions, very painful in the posterior area. On ultrasonography it was found a non-homogenous mass (82/36 mm) without vessels, located on the left ovary, behind the uterus. CT and MRI are often needed for further characterization and differentiation from other solid ovarian masses. A laparotomy surgery was performed and it found an ovarian tumor located in the pouch of Douglas, fixed by adhesions and covered by the pelvic colon. After adhesiolysis we discovered a twisted ovarian fibroma with necrosis. The frozen section confirmed our diagnosis. The patient was discharged with a favorable prognosis.
Conclusions: We can face problems of a differential ultrasound diagnosis between an uterine subserous fibroma and ovarian fibroma, because they have the same homogenous echogenicity. For this rare case with a non-homogenous mass we must exclude the malignancy. Ovarian torsion was an intraoperative surprise because the pacient did not present specific symptoms (nausea, vomiting and strong pain). The choice treatment is always surgical removal with intraoperative frozen section.

Keywords: ovarian mass, torsion, fibroma

ASSESSMENT OF CARDIOVASCULAR PROFILE SCORE IN FOETUSES WITH AGENESIS OF DUCTUS VENOSUS, WITHOUT STRUCTURAL HEART DEFECT.

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Introduction: The agenesis of ductus venosus (ADV) is a rare abnormality of fetal circulation, that may cause functional abnormalities in the circulatory system and increase risk of the heart defects, chromosomal anomalies and congestive heart failure.
Methods: Forty-six cases with the diagnosis od agenesis of DV with anatomically normal heart were referred to the tertiary center between April 2016 and March 2020. Cardiovascular profile score (CVPS) was assessed during the fetal echocardiography. ADV has been divided into two types: intrahepatic and extrahepatic.
Results: Extrahepatic type of ADV was recognized in 11 (24%) cases and all of them presented functional changes in cardiovascular system. In 7 cases (64%) occurred cardiomegaly, in 3 cases (27%) significant tricuspid regurgitation and in one case (9%) there was an ascites recognized in third trimester. Intrahepatic type of ADV was found in 35 cases (76%) and 12 (34%) of them presented functional abnormality in the form of a trivial tricuspid regurgitation. Average CVPS was 8. In group of intrahepatic type the CVPS was 10 in 23 cases, and 9 points in 12 cases. In eleven cases of extrahepatic type, CVPS score was 8 points.
Conclusions: The most common ADV type is intrahepatic type with no structural heart defects, in this cases functional abnormality have not been recorded. However, in the case of extrahepatic type without structural heart defects there has always been a functional abnormality of the circulatory system, of which the most common was cardiomegaly.

Keywords: agenesis od ductus venosus, profile score, fetal circulation

LIFE-THREATENING SIDE EFFECTS OF OVARIAN CYST PUNCTURE DURING PREGNANCY.

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Background: Corpus luteum cysts or functional changes, diagnosed in the 1st trimester regress by 16 weeks of gestation. The incidence of ovarian cysts detected during the second and third trimesters of pregnancy ranges from 0.5% to 3.0%. Most often there are organic changes, especially a dermoid cysts of the ovary. Most monofocal cysts about <5 cm diameter that persist in the second and third trimesters are not associated with complications.
Case Report: The patient was a 26-year-old woman admitted to the Perinatology Clinic at 26th week of gestation in order to perform elective puncture. Physical examination did not reveal any abnormalities. The patient had already undergone the removal of ovarian cyst twice in the past. The patient was readmitted due to acute abdominal pain in 6 weeks after the cyst puncture. Blood tests showed increased levels of inflammatory markers and a fluid in the Douglas pouch was visualized. A biopsy was performed and antibiotic was administered. The patient's condition did not improve so she was qualified for caesarean delivery. During the operation, a purulent cyst with left appendages was removed. After a two week, the patient was discharged without disease symptoms.
Conclusions: Generally, ovarian cyst puncture remain controversial. Cyst abscess is severe, though rare, complication of ovarian cyst biopsy, that should be considered in the presence of symptoms such as increased level of inflammatory markers or sudden fever accompanied by peritoneal symptoms. Due to the higher risk and uncharacteristic symptoms occurring in pregnant women, particular attention should be paid during diagnostics.

Keywords: puncture, cyst abcess, ovarian cyst

FERTILITY-SPARING SURGICAL TREATMENT OF RECURRENT OVARIAN BORDERLINE TUMOURS – PRESENTATION OF 3 CASES

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Background: The standard treatment of borderline ovarian tumours (BOTs) in women of reproductive age is conservative surgery with preservation of the uterus and one ovary. Nonetheless, the relapse of BOTs is high in patients undergoing conservative surgery. In recurrent BOTs, the second salpingo-oophorectomy would cause infertility, therefore other fertility-sparing treatment options are researched. As ultrasound is able to detect very small recurrences, it is possible to perform effective fertility-sparing surgery preserving healthy ovarian tissue even in recurrent BOTs.
Case Report: Three women in reproductive age (23-35 years old) were diagnosed with recurrent borderline ovarian tumours. All previously underwent one-sided salpingo-oophorectomy. All women planned reproduction when they were diagnosed with the recurrence of BOTs. Therefore, in order to prevent ovariectomy, they were treated by sparing surgery with intraoperative ultrasound to remove the lesion and leave as much of the healthy ovary as possible. The intended purpose of the surgery was achieved as the tumours were successfully removed and all three patients had regular menstrual periods following the surgery.
Conclusions: Fertility-sparing treatment of recurrent borderline ovarian tumours is still challenging. Surgery with intraoperative ultrasound enables precise tumorectomy and allows preservation of the healthy ovarian tissue in women of reproductive age, making it beneficial for patients planning pregnancy.

Keywords: borderline ovarian tumours, fertility-sparing surgery, conservative surgery, recurrence

Head and Neck Diseases

THE MANAGEMENT OF FOREIGN BODY DISPLACEMENT INTO THE MAXILLARY SINUS AS A COMPLICATION OF MAXILLOFACIAL INTERVENTIONS: A SYSTEMATIC REVIEW

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Introduction: Displacement of foreign bodies into the maxillary sinus shows an increasing tendency, especially in regard to raising number of dental implant installation procedures. However, there is a deficiency of reliable guidelines how to treat the displaced object.The purpose of current study was to compare the efficiency and the rate of late complications among the methods of removal of foreign bodies from maxillary sinus.
Methods: We performed a systematic review following PRISMA Checklist, searching Pubmed and Google Scholar databases. The inclusion criteria embraced the examined population of at least 10 cases and the follow up period of minimum 3 months.
Results: We qualified 7 papers from 531 identified in primary search. According to qualified studies, functional endoscopic sinus surgery used in order to remove foreign body from maxillary sinus had no late complications, whereas they occurred in 0-5% cases of using replaceable or pedicled bone approaches and in 15-18% cases of Caldwell-Luc approach.
Conclusions: Functional endoscopic sinus surgery should become a gold standard in retrieving foreign bodies from maxillary sinus, however poor evidences requires further investigation, especially in prospective, randomized trials.

Keywords: foreign body; maxillary sinus; maxillofacial interventions; maxillofacial complications; systematic review

THE OCCURRENCE OF TEMPOROMANDIBULAR JOINT DYSFUNCTION AMONG MEDICAL PERSONNEL

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Introduction: Temporomandibular disorders (TMD) include temporomandibular joint structures, chewing muscles, and surrounding tissues. Symptoms characteristic of these dysfunctions are temporomandibular joint pain, limitation of joint function and crepitations. The latest reports suggest that this problem in the Polish population most often has muscle etiology and affects 56.9% of cases, about 48.9% of cases has symptoms related to dislocation of the articular disc. The etiology of TMD is multifactorial, associated with pathologies of biomechanics of the joint, malocclusion, parafunctions, environmental factors, stress and hormonal management. Aim of the study was to assess the frequency of symptoms of temporomandibular joint dysfunctions in medical personnel and to identify triggering factors.
Methods: 272 participants took part in the study - nurses, midwives, physiotherapists, doctors and paramedics. The respondents completed an original questionnaire consisting of 36 questions regarding the mode of work, exposure to stress as well as direct and indirect symptoms of temporomandibular disorders, based on Diagnostic Criteria of Temporomandibular Disorders (DC/TMD). The data were subjected to statistical analysis using the STATISTICA 13 program and considering the significance at a p-value < 0.05.
Results: 73.9% of respondents experienced facial pain. 15% experienced pain during maximum mouth opening, and crepitation affected up to 75% of the subjects. The Chi2 test ($p < 0.05$) showed a statistically significant relationship between the type of shift work and the occurrence of pain in the temporomandibular joint and between the severity of stress and symptoms from the bruxism spectrum (teeth clenching, teeth grinding).
Conclusions: Among medical professions stress intensity was high. The influence of shift work on the incidence and severity of temporomandibular joint dysfunction has been demonstrated.

Keywords: temporomandibular disorders, medical professions, stress, shift work

MELKERSSON-ROSENTHAL SYNDROME: CASE REPORT

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Background: Melkersson-Rosenthal syndrome is a rare neuro-mucocutaneous disorder manifesting with a triad of recurring orofacial edema, facial nerve palsy and fissured tongue. This condition is often related with other disorders such as Crohn's disease or sarcoidosis.
Case Report: A 46-year-old man with recurring swelling of upper lip, arthritis, purulent nasal discharge and periodic bloody diarrhea. Cervical lymphadenopathy, facial nerve palsy and gingival hypertrophy were stated during physical examination. Biopsy of cervical lymph node and salivary gland revealed granulomatous cheilitis. Melkersson-Rosenthal syndrome, Sjogren's syndrome, Crohn's disease, sarcoidosis, and granulomatosis with polyangiitis were taken into account in the differential diagnosis. On the basis of histopathological examination and Schirmer test Sjogren's syndrome was excluded. On the ground of chest CT scan sarcoidosis was ruled out. A series of immunological laboratory tests were performed (ANA HEp2-1:2560, SSA and SSB-negative, pANCA-1:160, ASCA-slightly positive, anti-C1q-slightly positive, complement system-without deviation). On the basis of 2 out of 3 characteristic features Melkersson-Rosenthal syndrome was diagnosed. As a result of steroid therapy (Prednisone 30mg) lymphadenopathy and lip swelling successfully reduced. Unfortunately, gradual dose reduction caused the recurrence of symptoms. On account of the gastrointestinal symptoms and positive ASCA a further diagnosis of Crohn's disease, as a comorbidity, was planned.
Conclusions: Melkersson-Rosenthal syndrome is a rare cause of a lip swelling and it should be taken into account when facial nerve palsy or fissured tongue are present. As result of the fact that many coexisting diseases might be present, it requires an extensive diagnosis engaging doctors of different specialties.

Keywords: Melkersson-Rosenthal syndrome, Orofacial edema, Facial nerve palsy

EARLY SYMPTOMS OF ORAL SQUAMOUS CELL CARCINOMA FLOOR OF THE MOUTH - CASE REPORT.

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Background: The study presents the importance of diagnosis of oral squamous cell carcinoma in early stages of its carcinogenesis.
Case Report: A 55-year-old patient came to Maxillofacial Surgery Outpatient with pain in the floor of the mouth on the right side, which radiated along the mandible angle to the right ear, the temporomandibular joint and the temporal right bone.Patient was referred with sialolithiasis of sublingual gland confirmed with ultrasound.. A clinical examination revealed a palpable submucosal thickening in the projection of the right sublingual gland region. Careful intraoral assessment revealed pathologically altered mucose on the border between the ventral surface of the tongue and floor of the mouth. Histological examination showed oral squamous cell carcinoma in clinically visible leukoplakia. In this particular case, problematic placement of the leukoplakia resulted in difficult misnomered diagnosis.
Conclusions: Examination of the oral cavity should be performed in terms of oncological prevention of squamous cell carcinoma and inspect all anatomical regions of the oral cavity, including areas that are hard to approach, e.g. recesses of the floor of the mouth. Cancer of the mouth should be considered in all cases of chronic inflammation of the mucose resistants to standard anti-inflammatory therapy for a period of 2 weeks. Premalignant lesions, inflammation of the mucosa, and lithiasis in the sublingual and submandibular glands should be carefully differentiated from squamous cell carcinoma of the floor of the mouth.

Keywords: early symptoms of oral squamous cell carcinoma, leukoplakia, surgical treatment.

THE ACTION AND USE OF METANASE ENZYME IN THE REDUCTION OF BACTERIAL PLAQUE BIOFILM. LITERATURE REVIEW.

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Introduction: Dental carries is a disease that still affects most of our society. Enzymes, completely natural and safe substances, may turn out to be a new opening in its prevention.The aim of the study was to review the literature on the mechanism of anticarious activity of mutanase.
Methods: For this literature review, the available scientific databases were used, including PubMed, Scientific Journals and Elsevie Scopus. One of the first researches on mutanase was conducted by Guggenheim et al. in 1972. Further progress of the researchers was impaired by the lack of availability of an inducer necessary for the synthesis of the mutanase on an industrial scale. A team of scientists led by prof. Janusz Szczodrak, discovered an inducer substitute, the glucan of the cell wall of the laetiprus sulphureus fungus, and developed a method of obtaining mutanase which can be used, among others, in toothpastes or mouthwashes.
Results: All scientific reports quoted in this study indicate that the mutanase that breaks down the bonds in the mutan molecules, which are the foundation of the dental plaque, leads to the destruction or disturbance of the biofilm structure, and thus has an anticarious effect.
Conclusions: The ongoing research shows that mutanase is an enzyme which can be an alternative to known anticarious substances. New discoveries and the development of a replacement catalyst for the mutanase formation reaction have opened the prospect of using this enzyme on a larger scale in the fight against dental plaque.

Keywords: mutanase, dental carries, dental plaque

HOW MANY SECOND CHANCES MAY YOU GET? ROLE OF DESCEMET MEMBRANE ENDOTHELIAL KERATOPLASTY (DMEK) IN TREATMENT OF FUCHS ENDOTHELIAL DYSTROPHY

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Background: Accumulation of abnormal collagen in corneal layers in Fuchs endothelial dystrophy (FED) results in decreased function of its dehydrating pump. Consequently, corneal edema leads to impaired clarity and decreased vision. The full thickness penetrating keratoplasty (PK) was an invasive method with limited graft survival time, formerly performed in advanced FED cases. The transplant rejection is mostly connected with endothelial insufficiency. Recently introduced Descemet Membrane Endothelial Keratoplasty (DMEK) is a selective replacement of corneal endothelium and Descemet's membrane without additional stromal tissue from the donor. However, little is known of DMEK procedures in eyes with PK rejection. This is the first report of combination of those two methods in FED patient in Poland.
Case Report: A 63 year-old female patient suffering from FED underwent two procedures of PK - firstly in December 2011 and secondly in May 2016. Three years after the second transplant the patient reported deterioration of vision. Her visual acuity was counting fingers. Further examination revealed corneal haziness, thickening, and features of transplant rejection. Consequently, DMEK was performed in October 2019. One month after the procedure transplanted graft adhered correctly and was translucent. The improvement of visual acuity to 0.2 and reduction of central corneal thickness was maintained for 8 months period of time.
Conclusions: Even in patients after previous PK procedures, DMEK is less invasive than PK, provides better vision and faster recovery. This particular case where other options were no longer available proves that DMEK can be the only chance at sight improvement in FED.

Keywords: Ophthalmology, Descemet Membrane Endothelial Keratoplasty, Penetrating Keratoplasty, Fuchs Endothelial Dystrophy, Corneal Transplant

A QUALITATIVE ANALYSIS OF ORTHODONTIC-RELATED POSTS ON GOOGLE

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Introduction: The Google search engine is commonly used for the distribution of information. also in medicine. Many patients look for specialistic knowledge before and during orthodontic treatment. The quality of presented materials is usually not verified by specialists. Aim was to assess the quality of materials about orthodontic appliances presented on Google search engine.
Methods: 1 840 000 posts were found about orthodontic appliances. Posts from five consecutive pages were collected and were qualitatively analyzed using discourse analysis.
Results: Analysis revealed five groups of presented posts: 26 specilaists entries , 8 commericals, 8 medicine networks, 2 blogs, and 6 undefined posts. 24 posts were developed by lay people without professional background and contents was not evidence -based medicine.
Conclusions: To improve knowledge acquirement of orthodontic patients' the specialists' posts should be hilghlighted. The patients should be awared by the clinicians that half of informations from Google is not evidence-based medicine due to lack of regulations and has no high quality.

Keywords: orthodontic appliance, google search engine, patient's information

VEGETARIAN TOOTHPASTE HERBAL AGENTS IMPACT ON INHIBITION OF PSEUDOMONAS AERUGINOSA AND STREPTOCOCCUS MUTANS GROWTH IN VITRO

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Introduction: The study was aimed to investigate the antimicrobial potential of various herbal agents of vegetarian toothpastes against Streptococcus Mutans (SM) and Pseudomonas Aeruginosa (PA) in Vitro.
Methods: Test group contained 4 Vegetarian toothpastes, each containing different main herbal agent, such as: Punica Granatum Pericarp Extract (PGPE), Bromelain, Akarkara (Anacyclus pyrethrum), Miswak (Salvadora Persica). 0,2% Chrorhexydine gel (CHX) was used as a control group. Inhibitory activity against SM and PA was examined via agar disc diffusion method using 12 Agar plates for PA and 12 Trypticase soy agar plates for SA. The thickness of the inhibition zones was measured manually by micrometer. The results were analysed in IBM SPSS Statistics.
Results: All members of the test group have showed significally higher biofilm formation inhibition result in PA than the control group. PGPE showed better result (0,3883 cm) than Bromelain (0,3508 cm), Miswak (0,3250 cm), Akarkara (0,3333 cm), and CHX (0,1167 cm) in PA. Bromelain showed higher biofilm formation inhibition (0,3567 cm) than PGPE (0,3267 cm), and control CHX (0,2425 cm) in SM. There was no sigh of inhibition zone in Miswak and Akarkara in SM.
Conclusions: All the agents expressed antimicrobial effects against Pseudomonas Aeruginosa. PGPE has better antimicrobial activity against PA. Bromelain and PGPE have antimicrobial effects against Streptococcus Mutans as well. Bromelain showed better antimicrobical activity against SA.

Keywords: Vegetarian toothpaste, Bromelain, Punica Granatum Pericarp Extract, Miswak, Akarkara, Pseudomonas Aeruginosa, Streptococcus Mutans, biofilm

MORPHOLOGICAL ASPECTS OF PARODONTAL PATHOLOGY

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Introduction: Today the issues of parodontal tissue diseases hold a leading place among problems of therapeutic dentistry. Due to development of pathological processes of parodontium, not only its morphological structure also functions are damaged too. Fibrous structures of periodontium are involved in inflammation. In the studied literature collagen and elastic fibers are described but their role in trophic function isn't clearly defined.
Methods: Thin sections were made of transversal and longitudinal slice of human teeth, removed for orthodontic and parodontal indications. Teeth and tissues adjacent to the cement were stained by the Gross method. We examined the obtained samples with a light microscope and recorded them with a digital camera.
Results: on thin sections of teeth, we recorded the presence of agriophilic fiber bundles, which are intertwined around perimeter of periodontium. These fibers pass near cementum of the tooth root, and in some areas are immersed in it, forming so-called lacunes. Their characteristic location on the tooth root surface, which corresponds to the level of periodontal fibers attachment. The lacunae completely penetrate the layer cementum reaching terminal processes of dentinal tubules of tooth, forming transport routes for liquor circulation. On condition of parodontitis, signs of cementum demineralization and destruction of dentinal tubules with sclerosis .
Conclusions: our study revealed irreversibility of changes in fibrous structures in parodontitis and the functional relationship of morphological elements of tooth root tissues with degree of their destructive processes.

Keywords: morphology, parodontitis, destruction of elastic fibers

PLUNGING CYST OF UNKNOWN CAUSE IN A MALE NEWBORN

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Background: Sublingual tumors with a benign character are statistically not a common encounter in the neonatal period of an individual, not even reaching 1% of all oral cysts in literature reports. Additionally, the differential diagnosis is usually made with ranulas or retention cysts, thyroglossal cysts and exceptionally with congenital duplication cysts.
Case Report: We present you a case of a 3-days male newborn, who has been hospitalized in the Pediatric Surgery Unit, following a large-sized, tongue-deforming cystic formation in the oral cavity. On the grounds that the anomaly was preventing the newborn from feeding, urgent abdominal, transfontanellar and anterior cervical ultrasound had been performed, resulting in a well-defined, oval-shaped benign tumor in the submental region, measuring 35/25mm. Both genetic and cardiac assessments had ruled out a congenital source. Four days after the condition had installed, 11ml of mucous, clear liquid was discharged from the cyst, apparently with no remarkable post-interventional symptoms or complaints. Notwithstanding, 22 days afterwards, the excision of the lesion had to be completed, partly due to the recurrence of the cyst but most importantly, for the reason of its extension to the anterior cervical region. The histopathological examination suggested an even more exceptional finding, a gastrointestinal duplication cyst, possibly originated in the esophagus.
Conclusions: There has to be outlined the initial noticeable pathology, usually conservatively resolved, to be later developing into a complex case, not to mention the fragile neonatal age and the ultimate necessity of surgical treatment.

Keywords: neonate, benign cyst, transfontanellar ultrasound

SUBSTANTIATION OF THE MOLAR OCCLUSION SURFACE FUNCTIONAL RESTORATION

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Introduction: Modern methods of orthopedic treatment with non-removable orthopedic structures mean the restoration of the natural configuration and the size of the occlusal surface of the missing teeth concerning the functional status of the masticatory apparatus. The relations between the shape and function of the lost tooth indicates the perspective of further study of odontological parameters of the teeth in order to improve orthopedic treatment. These research data are needed to restorate the natural form of occlusal surface of the teeth more effectively, which is especially important for dental bridges constructing.
Methods: The clinical examination of 50 people of both sexes was performed To study odontoglyphic molars peculiarities of the upper and lower jaw,, within which the odontoglyphic pattern of molars was verified taking into account the classification of AP Gasyuk and PM Skripnikov (2001). The odontometric study was perfomed in 30 people according to the method, descriped by OO Zubov and NI Khaldeeva. Statistical processing was performed using a program for data statistical analysis of biomedical research "Statistica 6.0" (Stafsoft, USA).
Results: It is established that the odontoglyphic features of the occlusal surface of the upper jaw molar crowns of both sexes are represented by "Y-four" and "Y-three" patterns. The occlusal surface of the mandibular molar crowns is represented by "Y-five", "Y-four" and "Y-four" odontoglyphic patterns. As a result of the odontometric study, the average values of mesio-distal, vestibulo-lingual sizes and height of the crowns of the upper and lower jaws molars in males and females were determined. An algorithm for functional restoration of the occlusal surface of the first molars of the mandible has been developed.
Conclusions: The practical application of odontological parameters of the upper and lower jaw molar crowns for using of fixed prosthesis was substantiated on the basis of the carried-out research.

Keywords: molars of the upper and lower jaw, odontoglyphic pattern, odontometric parameters, modeling of the occlusal surface.

Infectious diseases

PREGNANCY AND LABOUR IN THE COVID-19 ERA – THE CROSS-SECTIONAL STUDY OF 1319 PATIENTS IN POLAND.

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Introduction: On the 4th March 2020, the first zero-patient was detected in Poland. A week later, the World Health Organization announced the global pandemic. The current situation is considered as a significant problem to the public health and all medical specialities, including obstetric care. SARS-CoV-2 infection can have a major impact on mothers and fetus life on the pathophysiological and psychological level.
Methods: We performed aa survey on Facebook groups for pregnant between 4th March and 31th of May 2020. Responders (1319) were aged between 17-43 and were during pregnancy or right after the delivery.
Results: Patients in the vast majority were not tested for COVID-19 (96,7%). Responders (79,4%) stated that they are worried about their pregnancy and delivery during the current epidemy. Only 17,2% of them use masks as a protective measure. 4,7% of them used consultations via the Internet, and 5% of them consider this way of communication as sufficient. Only 3 out of 57 partners could participate in the delivery during the epidemy. Only one of 57 births took place at home.
Conclusions: The COVID-19 pandemic is an unprecedented time for modern medicine in providing care for patients, especially pregnant women. The anxiety related to the current pandemic should be an element to fight with for obstetricians. Education about the use of protective methods should be broadened.

Keywords: Covid-19, pregnancy, delivery, sars-cov2

NEUROLOGICAL COMPLICATIONS OF PANDEMIC A(H1N1)2009PDM, POST-PANDEMIC (H1N1)V, AND SEASONAL INFLUENZA A

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Introduction: Neurological complications of influenza such as transverse myelitis, encephalopathy or encephalitis, causing lethargy, coma or even patient's death are rare and develop in 0.21/1000000 patients per year. No particular mechanism explains the pathogenesis of influenza associated neurological complications. The diagnosis remains complicated due to a lack of standardized diagnostic methods. The aim of this study is to describe the clinical manifestations and outcomes of neurological complications in influenza patients.
Methods: We report 12 cases of influenza subtype A(H1N1) related neurological complications. Patient selection criteria: age >=18 years, laboratory confirmed influenza by rt-PCR of smears from throat and nose, neurological symptoms. Influenza-associated neurological complication was described as a development of neurological symptom with no other origin. The outcome was classified into 5 categories based on a modified Rankin scale.
Results: 12 patients were enrolled (age, 18-71). Neurological complications of pandemic A(H1N1)pdm2009 influenza occured in seven of 69 (10.1%) hospitalized patients. The most common complication was encephalopathy. Neurological complications developed in two out of 24 (8.3%) hospitalized patients during post-pandemic (H1N1)v period. One patient presented with encephalopathy, another with meningoencephalitis. During the 2018 and 2019 influenza seasons neurological complications occured in three out of 301 (1%) patients with seasonal influenza. After the treatment, three out of 12 patients (25%) were discharged with mild disability, two (16.7%) with moderate disability, and one (8.3%) with severe disability.
Conclusions: Neurological complications were more common in patients with pandemic A(H1N1)pdm2009 influenza. Therefore, each patient with unexplained neurological symptoms should be tested for influenza virus during epidemics and pademics.

Keywords: Encephalopathy, encephalitis, meningitis, influenza, polyneuropathy

THE SWITCH FROM TENOFOVIR DISOPROXIL FUMARATE (TDF) TO TENOFOVIR ALAFENAMIDE (TAF) DETERMINES WEIGHT GAIN IN ART-EXPERIENCED PATIENTS.

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Introduction: Tenofovir alafenamide fumarate (TAF) is an alternative to tenofovir disoproxil fumarate (TDF). There is growing evidence of unfavorable effects of TAF on weight and BMI among (ART)-experienced patients.The aim of this study was to evaluate whether switching from TDF-containing to TAF-containing ART is associated with an increase in BMI and body weight in ART-experienced patients.
Methods: The study included 32 patients who switched from TDF to TAF only (first group) and 68 patients who switched from TDF to TAF along with changes to other components of the ART regimen (second group). A generalized linear model for repeated measurements with multiple comparison tests were used to evaluate the weight change before and after the switch.
Results: Significant weight gain occurred during the first year after initiation of TAF-containing ART regimens in both groups. During the second year of TAF-containing treatment, a sustained trend of body weight increase was noted only in the second group. The increases in weight during the treatment with TDF-containing ART were not statistically significant in both groups. Analysis of body weight changes in subpopulations revealed a significant weight gain within two years after the switch in patients over 50 years of age and in those whose ART had lasted longer than 10 years.
Conclusions: Possible impact of TAF on weight gain should be taken into account when selecting ART components, especially in older patients or those with a long history of ART.

Keywords: TDF, TAF, ART, weight, BMI

SMOKING AND COVID-19 - MECHANISMS AND THE INFLUENCE OF SMOKING ON SUSCEPTIBILITY TO SARS-COV-2 INFECTION AND ITS COURSE

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Introduction: Smoking is a widespread habit and addiction of over 26% of Polish adults. The highest number of smokers is observed among people aged 45-65. The fact that smoking prevalence is higher among older people, similarly to the prevalence of a severe course of COVID-19 suggests a need for researching some kind of mutual dependencies.
Methods: Research of published scientific articles, raising the previously mentioned subject via Pub Med and Google Scholar data base.The main aim is to sum up all of the pieces of information, concerning the mechanisms and the influence on susceptibility to SARS-CoV-2 infection.
Results: According to latest, not that numerous scientific data, concerning new human pathogen ,as we can call SARS-CoV-2, the virus increases the lungs associated ACE2 enzyme activity. This causes a greater risk of infection because of high level of affinity to the ACE2 receptor, which is used to get into the human body cell and infect it. Smoking is said to be a factor, that decreases the ACE2 activity and its receptors' number. Nowadays, the scentific comparative tests are performed to point out that smokers are more susceptible to infection with SARS-CoV-2 and severe course of COVID19, as well as more often they are in need of care of Intesive Care Unit or mechanical ventilation, compared to non-smokers.
Conclusions: Summing up the available data, smokers are almost 1,4 times more likely to suffer from severe and symptomatic course of COVID-19 and around 2,4 times more often need Intensive Care Unit support. Although lots of scientific tests have to be carried out to get some reliable statistics, we can already observe a bad impact of smoking on COVID-19 course. There are 1,1 billion people, who smoke all over the world, and SARS-CoV-2 pandemic has spread across the globe, which shows the imporance of gaining a knowledge about relation between smoking and COVID-19 course.

Keywords: tobacco, smoking, COVID-19, coronavirus

AWARENESS OF ANTIBIOTIC-ASSOCIATED DIARRHEA AND PSEUDOMEMBRANOUS COLITIS DURING PANDEMIC OF COVID-19

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Background: Pseudomembranous colitis (PMC) is commonly associated with the bacterium Clostridium difficile (C.difficile) which is considered one of the most common cause of diarrhoea and important public health threats, because it is associated with antibiotic treatments and high morbidity and mortality. The widespread usage of broad-spectrum antibiotics during the actual COVID-19 pandemic increased risk of C. difficile infections (CDIs). The presented clinical case demonstrates the features of pseudomembranous colitis after taking antibiotics.
Case Report: A 53-year old male patient was admitted to the Department of Gastroenterology due to frequent defecation up to 10-12 times a day with liquid feces without pathological impurities, abdominal discomfort, dry mouth. Anamnesis: antibiotic therapy for 22 days (Ceftriaxone 1.0 bd, Levofloxacin 100 ml (500 mg) bd, Linezolid 600 mg bd, ?eropenem 1,0 tds) as a treatment of post-injection phlegmon of the right thigh; septic arthritis of the right knee. On physical examination vital signs were normal. Laboratory tests showed: inflammatory syndrome, hypoalbuminemia, electrolyte imbalance. C. difficile toxin (A/B) and stool culture were positive. Antibiotic-associated diarrhea: pseudomembranous colitis was diagnosed. The treatment of the patient included: Metronidazole 500 mg PO tds, Vancomycin 125 mg PO qds for 14 days; Enterol 250 mg PO tds, Alpha-normix 200 mg PO tds, infusion therapy.
Conclusions: Avoiding unreasonable and uncontrolled administration of antimicrobial drugs, using the minimum effective doses and defining the duration of treatment clearly is necessary to prevent development of PMC, especially during the pandemic of COVID-19.

Keywords: PMC, CDIs, COVID-19, antibiotic-associated diarrhea, C. difficile toxin.

IN VITRO INHIBITORY EFFECT OF FLUOXETINE AGAINST SARS-COV-2

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Introduction: Coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), continues to impact the health, social wellbeing, and economies of nations worldwide. At present, there are no antiviral drugs that effectively target viral attachment, viral entry, or genomic replication. The aim of this study was to investigate the inhibitory effect of the selective serotonin reuptake inhibitor fluoxetine against SARS-CoV-2 replication in cell culture.
Methods: Cytotoxicity and replication of a SARS-CoV-2 isolate from an oropharyngeal swab of a COVID-19 patient were examined using African green monkey kidney (Vero E6) cells and human nasal epithelial cells (hNECs). Cytotoxicity in SARS-CoV-2-infected Vero E6 cells and hNECs (MOI: 0.5 and 0.1, 1 h) was assessed. The effect of fluoxetine (10 µM) on viral replication was quantified in culture supernatants following culture for 4 days at 37°C with 5% CO2 by real-time RT-qPCR using the LightMix modular Assay SARS-CoV-2 RdRP RT-qPCR and RNA Process Control kits. Statistical significance was determined using one-way analysis of variance.
Results: Two spatial isomers of fluoxetine showed the same activity against SARS-CoV-2 and significantly inhibited SARS-CoV-2 at 0.8 µg/mL. The IC50 was determined to be 410 ng/mL. Treatment with 10 µM fluoxetine resulted in 0.79 and 0.71 log10 reductions in the SARS-CoV-2 titer in Vero E6 and hNECs, respectively. Treatment with fluoxetine decreased viral protein expression.
Conclusions: Our study showed the inhibitory effect of fluoxetine against SARS-CoV-2 replication in cell culture, suggesting the therapeutic potential of fluoxetine for the initial treatment of patients with COVID-19.

Keywords: Fluoxetine, selective serotonin reuptake inhibitor, COVID-19, SARS-CoV-2

CHARACTERISTICS OF SCARLET FEVER IN CHILDREN - ONE YEAR EXPERIENCE IN THE EMERGENCY DEPARTMENT

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Introduction: Scarlet fever (SF) is a common illness in pediatrics caused by group A beta-hemolytic streptococcus, which usually occurs after an episode of pharyngitis.
Methods: We conducted a retrospective study of SF cases that were diagnosed (clinical exam and laboratory test) in the Emergency Department (ED) of the National Institute for Mother and Child Health "Alessandrescu-Rusescu", Bucharest, Romania, between September 2018 and August 2019.
Results: A total of 1383 children who presented in ED were diagnosed with streptococcal pharyngitis during the analyzed period. Out of these, 114 (8.2%) showed clinical signs and symptoms characteristic of SF. Males (61.4%) were more frequently affected. The median age of patients with SF was 5.9 years, significantly higher compared to those with streptococcal pharyngitis (4.9years,p=0.015). Fever (98.2%) and rash (100%) were the most common symptoms and the main reasons for presenting to ED. A total of 24 children (21.1%) needed hospitalization, their age being significantly lower (5.2 vs 6.1 years,p=0.037) compared to those treated on an outpatient basis. The hospitalization rate was significantly higher in patients with SF than in those with streptococcal pharyngitis (21.1% vs. 8.8%, p=0.017). The evolution was favorable, without short-term complications both for the hospitalized patients and for the 75 children who presented for re-evaluation at 10 days.
Conclusions: We identified a SF incidence of 8.2% among children with streptococcal pharyngitis and a relatively high rate of hospitalization. It is necessary to diagnose SF early and manage it properly to reduce the burden of these diseases among the pediatric population.

Keywords: scarlet fever, children, emergency department

DOES INTERFERON-GAMMA (IFN-GAMMA) RELEASE ASSAY (IGRA) MATTER IN THE DIAGNOSIS OF ACTIVE TUBERCULOSIS?

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Introduction: Around 10 million people develop active tuberculosis globally in 2018, and nearly 1,5 million people die from the disease every year according to World Health Organization (WHO). Active tuberculosis is a multiorgan disease caused by primary infection or as a re-activation of latent tuberculosis. Interferon-gamma (IFN-gamma) Release Assays (IGRA) are diagnostic tests which evaluate the contact with Mycobacterium tuberculosis (latent tuberculosis). One of the most frequently used IGRA test is QuantiFERON-TB Gold Plus (QFT-TB). IGRA result is unaffected by Bacillus Calmette-Guérin (BCG) vaccination and is dedicated for vaccinated populations in place of tuberculin skin test. However, the diagnostic value of IGRAs in active tuberculosis is unclear. The aim of the study was to evaluate the QFT-TB assay as a tool in the diagnosis of active tuberculosis (TB) in Poland, Warsaw (low-endemic country).
Methods: A hospital (University Clinical Center of Medical University of Warsaw, Banacha department) database of 886 cases tested for QFT-TB over the five year (2014-2019) period was analyzed to investigate positive QFT-TB patients with confirmed active TB cases via clinical, microbiological, radiological or histopathological examination.
Results: 155 patients (17.49%) had positive result of QFT-TB test, of whom 11 (7.10%) were proven to have an active TB. In particular: 8 (5.16%) via microbiological culture, 1 (0.65%) via radiological examination and 1 (0.65%) via histopathological examination. On the other hand, 4 patients with negative result of QFT-TB (0.55%) had microbiologically confirmed active TB.
Conclusions: QFT-TB assay seems to be an unreliable tool for active TB diagnosis in low-endemic country.

Keywords: tuberculosis, IGRA, diagnosis

A NOT SO POPULAR VIRUS, BUT AN INTERESTING ONE: CHIKUNGUNYA

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Background: With a 3 million infections each year and an inexisting vaccine, chikungunya virus is made known by its transmission: mosquitoes. The pacients are experencing fever and arthalgya, also stiffness and rash can appear.
Case Report: A 38-year-old male presented at Sukraraj Tropical and Infectious Disease Hospital, Nepal, with chief complaints of severe retroorbital pain and sore throat. Also, mild fever, headache, muscular pain, and joint pain of the limbs were present. No skin rush. On physical examination, the following systems presented insignificant changes: respiratory, cardiovascular, gastrointestinal and nervous. 10 days ago, he has traveled to Dhading district, Nepal. The results of blood tests were showing a pretty raised value of leukocyte (10.000/mm3), a raised count of neutrophils (83%) and lymfocytes (75%), a normal value of eosinophils (2%). The values of hemoglobin and platelets were found in the normal ranges. Also, a blood culture and a serological test were made for malaria parasite. The results were negative. The next step was to perform a immunochromatographic test for dengue virus and another one for chikungunya virus. The first mentioned was found negative, while the test for the IgM antibody to CHIKV was positive. The pacient was diagnosed with chikungunya virus, based on clinical appearance, laboratory results and the travel history to Dhanding district. The pacient received treatment with azithromycin (NSAID) and an antihistamine, and it recovered completely.
Conclusions: Because there is no vaccine for this virus, the prevention is important, so people should be more aware before travelling by inquiring the endemic areas.

Keywords: chikungunya, virus, mosquitoes, travelling.

THE POST-COVID-19 SYNDROME AS A DIAGNOSTIC AND THERAPEUTIC CHALLENGE FACING MEDICINE IN THE NEAR FUTURE

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Background: One of the complications reported in patients with a past infection with coronavirus disease 2019 (COVID-19) is an autonomic dysfunction. The condition manifests acutely as a high fever and in the longer term as the dysregulation of the sleep/wake cycle, cognitive dysfunction and profound unremitting anergia.
Case Report: In June 2020 a previously healthy 32-year-old male experienced fever, headache, anosmia, asthenia, dry cough and shortness of breath. His laboratory exams confirmed COVID-19 (qRT-PCR for SARS-Cov-2). The patients was treated symptomatically for his disease and partially improved in the following three weeks. At the beginning of August the patient still complained of severe physical fatigue, severe headaches, dry skin and difficulty thinking and reading with "brain fog". The medical examination (including neurological) did not reveal any remarkable condition. The laboratory check-up revealed increased C-reactive protein level (13 mg/L) with no alterations in other parameters (complete blood count and erythrocyte sedimentation rate; the liver, kidney, thyroid gland function tests; electrolytes; coagulation times; lipid profile; serum glucose). A chest radiograph, abdominal ultrasound scan and magnetic resonance imaging of the brain were normal. The patient was finally diagnosed with the post-COVID-19 syndrome. The treatment with prednisone (10mg daily) was commenced in September. Patients started to improve in the following weeks.
Conclusions: The post-COVID-19 syndrome is characterized by prolonged malaise, headaches, generalized fatigue, painful joints, dyspnea, chest pain and cognitive dysfunction. In approximately 10% of patients the post-COVID-19 syndrome may persist for months after the acute infection and almost half of these patients report reduced quality of life.

Keywords: post-COVID-19 syndrome, COVID-19, autonomic dysfunction

Internal Medicine

BREAST CANCER IN A PREGNANT WOMAN – DIAGNOSTIC CHALLENGE

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Background: Pregnancy-associated breast cancer (PABC) is a subtype of breast cancer (BC) that occurs during pregnancy, 1 year following birth or during the breast-feeding period. Being the most common malignancy of pregnancy, PABC affects 1 in 3000 pregnant women annually. Commonly, diagnosis and treatment are delayed in PABC patients compared to BC patients due to the increased size and density of the breast associated with pregnancy and lactation, which puts PABC patients at risk for diagnosis of cancer at a more advanced stage.
Case Report: We describe the case of a Caucasian woman, gravida 1 para 0, diagnosed with PABC at the age of 37-years-old, during the 27th week of gestation. Exploratory ultrasonography revealed two tumors, approximately 2 cm in diameter each, in the right breast alongside extensive ipsilateral lymph node involvement, without metastasis to the abdomen. Core biopsy and immunohistochemistry confirmed a triple negative, poorly differentiated ductal carcinoma of the right breast. The clinical stage of the tumor in this patient was determined to be cT2, N1, Mx. She underwent a total mastectomy with axillary node dissection on the right side and was started on adjuvant therapy with Paclitaxel.
Conclusions: Diagnostic and treatment delays, together with lower diagnostic and treatment intensity, are said to contribute to more advanced disease and poorer outcomes in women with PABC. Thus, our report highlights the importance of proper breast oncology surveillance during pregnancy, using safe and inexpensive methods including ultrasonography and biopsy of suspicious masses, to avoid cancer development and progression.

Keywords: Pregnancy-associated breast cancer, breast cancer, pregnancy

DIAGNOSTIC DIFFICULTIES AND NOVEL TREATMENT OF PATIENT WITH RENDU-OSLER-WEBER DISEASE.

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Background: We will present the case of 53-year-old patient with Rendu-Osler-Weber disease. The patient was admitted to the Hematology Department for bevacizumab treatment.
Case Report: The patient first symptoms appeared in 2013, then as a result of abdominal ultrasound examination multiple liver hemangiomas were found. Patient reported minor nosebleeds and heavy periods. Laboratory tests revealed iron-deficiency anemia. In 2014, the patient had the first episode of anemia requiring blood transfusion. In April 2016, a diagnosis of Rendu-Osler-Weber disease, also known as hereditary haemorrhagic telengiectasia (HHT)was established, based on mutiple liver hemangiomas, family history and recurrent epistaxis. From the beginning of 2019, the symptoms of the disease intensified. Recurrent gastrointestinal bleeding was observed with anemization (hemoglobin up to 6g / dl), transfusion requirement was 2-3 unit /month . 15.10.2019 as a result of deterioration of the patient's condition, a severe clinical course of the syndrome with organ complications was found. 20.12.2019 the patient was given the first dose of bevacizumab 200 mg IV. After 3 weeks On January 13, 2020, she was re-admitted to the hematology ward for the second dose of bevecizumab. On March 6, 2020, after control tests, the fourth dose of the drug was given and it was decided to extend the intervals between subsequent doses to 5 weeks due to significant improvement in haemoglobin concentration.
Conclusions: Bevacizumab is a promising line of treatment for HHT patients with refractory anemia and may be useful as a bridge therapy awaiting for liver transplantation.

Keywords: Rendu-Osler-Weber disease, bevacizumab

CHARACTERISTICS OF CARDIAC REMODELING IN PATIENTS WITH CHRONIC ISCHEMIC HEART FAILURE ON THE BACKGROUND OF ANEMIC SYNDROME

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Introduction: In Ukraine the prevalence of chronic heart failure is 10-15% in people over 70 years. About 30% of the world's population suffers from anemia. The prevalence of both pathological conditions increases with age.
Methods: A retrospective analysis of 35 medical charts of inpatients with CIHF has been carried out. All patients were divided into 2 groups: the main group consisted of patients with chronic ischemic heart failure with anemic syndrome, control - patients with chronic ischemic heart failure. General clinical data, the results of laboratory and instrumental research methods have been evaluated.
Results: The end-diastolic index of the left ventricle and the size of the left atrium in patients with CHF with anemia tended to increase. In 91,7% of patients in the control group, the left ventricular ejection fraction (LV EF) was preserved, and in 8.3% LV EF was reduced. In the main group the majority of patients (73,92%) had intermediate LV EF, 13,04% - with preserved and reduced LV EF, respectively. The patients of both groups showed the 1st type of diastolic dysfunction. According to the Mann-Whitney test results, there was a significant difference in left ventricular posterior wall thickness (LVPWT and in the transverse size of the aorta ($U = 63$; $U = 67$, respectively; $p < 0,05$). An interrelationship was found between the final diastolic size of the left ventricle and the level of total serum iron binding capacity ($rs = + 0,38$; $p < 0,05$). LVPW had an interrelationship with the level of total iron-binding capacity of serum ($rs = + 0,56$; $p < 0.05$).
Conclusions: The presence of anemic syndrome and iron deficiency probably affects the features of cardiac remodeling in patients with chronic ischemic heart failure, which was confirmed by the correlative analisys.

Keywords: chronic heart failure, anemic syndrome, iron deficiency.

CONTEMPORARY APPROACH TO ASSESSMENT OF THE RISK OF CORONARY ARTERY DISEASE PROGRESSION ON THE BACKGROUND OF POSTMENOPAUSAL OSTEOPOROSIS

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Introduction: Since the onset of menopause, the incidence of cardiovascular pathology and changes in bone mineral density (BMD) in the female population significantly increase.
Methods: A study involved 115 women in the postmenopausal period with CAD: stable exertional angina of II-III functional class (FC) (mean age 67.07±0.92 years). Depending on the BMD state, all patients were divided into 3 groups: group 1 ? patients with normal BMD; group 2 – patients with osteopenia; group 3 – patients with osteoporosis. All patients underwent lipid profile tests, daily monitoring of ECG by Holter, two-dimensional echocardiography with dopplerography, intima-media complex (IMC) measurement. The BMD state was investigated with the help of the ultrasound densitometry, FRAX algorithm. The levels of cardiovascular and bone remodeling biomarkers were assessed by enzyme immunoassay.
Results: In our study a significant increase in the level of osteoprotegerin (OPG), oste??alcin and VEGF-A, homocysteine in parallel with the BMD disorders progression was found, mainly in women with CAD and PMO. The results of the relative risk (RR) assessment showed a probable interrelationship between the OPG, ostecalcin, VEGF-A and homocysteine level and atherogenic dyslipidemia, diastolic dysfunction of the left ventricle, dilatation of the left atrium, thickening of the intima-media complex, arrhythmic complications and vegetative imbalance development (?<0,05).
Conclusions: Determination of the levels of bone and vascular remodeling biomarkers can be used as a contemporary approach to assessment of the risk of coronary artery disease progression on the background of postmenopausal osteoporosis.

Keywords: coronary artery disease, postmenopausal osteoporosis, osteopenia, serum biomarkers, relative risk.

MANAGEMENT OF A PATIENT WITH LYMPHANGIOLEIOMYOMATOSIS: A CASE REPORT

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Background: Lymphangioleiomyomatosis (LAM) is a rare neoplastic disease which almost exclusively affects women. LAM is characterized by a cystic destruction of the lung and progressive respiratory failure. Symptoms and signs include dyspnea on exertion, recurrent pneumothorax, abdominal tumors including renal angiomyolipomas and lymphangiomyomas.
Case Report: A 46-years old previously healthy woman was reffered in Pauls Stradins Clinical University hospital with right kidney angiolipoma rupture and secondary retroperitoneal hematoma – the surgery was performed (2006 year). CT findings showed cystic changes in lungs; VATS marginal biopsy was performed – the diagnosis of LAM was confirmed. In the next years the patient notes progressive shortness of breath. In 2017 – secondary spontaneous right side pneumotorax – pleural space drainage was performed. A few days later – repeated pneumotorax – right side VATS and partial pleirectomy was performed. Gradual deterioration of respiratory function tests in the patient. In 2018 the patient was prescribed Sirolimus therapy. The patient achieved stabilization of lung functional tests and reduction of symptoms under treatment.
Conclusions: LAM is extremely rare disease - the prevalence is 3 to 5 women per million women. Most commonly, patients have the signs and symptoms of lung disease but can also present with manifestations arising from extrapulmonary sites, especially renal angiomyolipomas. This case demonstrates the diagnosis, management, and course of the disease over a long period of time. Sirolimus is the only medicine that has been shown to be effective to stop the disease from progressing. Indications for the treatment of LAM have been approved by US Food and Drug Administration in 2015.

Keywords: lymphangioleiomyomatosis, interstitial lung disease

CANCER OR AUTOIMMUNE PROCESS? PROBLEMATIC DIAGNOSIS OF IGG4-RELATED DISEASE - CASE REPORT

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Background: IgG4-related disease is an autoimmune condition, which means the symptoms appear in organs due to dysregulated immune system. It occurs mostly in middle-aged to elderly people, more likely in men. Due to the number of organs it can affect, the disease is heterogenous and has no one individual type.
Case Report: A middle aged female was referred to the Department of Rheumatology with recurrent right upper lid oedema for two years and orbital pain with a history of chronic rhinitis and night cough. Physical examination did not reveal any other symptoms. CT of the sinuses demonstrated thickening of the mucosal membrane in ethmoid and maxillary sinuses. MRI of the orbits showed enlargement of the right lacrimal gland which was described as a bening tumor. Biopsy of right lacrimal gland excluded lymphoma and showed lymphoplasmacytic infiltration with IgG4 - producing cells. The level of IgG4 was increased. The therapy of glucocorticoids was initiated which resulted in a significant clinical improvement. IgG4- related disease was diagnosed on the basis of the symptoms, result of biopsy, elevated IgG4 and clinical improvement after glucocorticoids.
Conclusions: Establishing IgG4-related disease is a considerable challenge in clinical diagnosis, due to the relatively rare occurrence, non-specificity of symptoms, related to the involvement of various organs. Moreover, with the course of the disease, IgG- related diseases not infrequently suggests a different diagnosis. Nevertheless, early illness detection is very important, as if it left untreated, it causes extensive fibrosis and impairment of organs function.

Keywords: IgG4-related disease, rheumatology, case, autoimmune processes

YELLOW NAIL SYNDROME – AN EXTREMELY RARE DISEASE IN A PATIENT WITH END-STAGE RENAL DISEASE ON PERITONEAL DIALYSIS – CASE REPORT

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Background: Yellow nail syndrome (YNS) is an extremely rare disease of unknown pathogenesis. Typically three clinical symptoms are present: lymphedema, pleural effusion and yellow nails. No specific treatment is considered, so in patient symptomatic treated is applied. We did not find in the literature any case of patient with end-stage renal disease and YNS. This is why we decided to describe a patient with ESRD and YNS.
Case Report: A 43-year-old woman suffering from end-stage renal disease (ESRD) because of diabetes mellitus type 1. (DM t.1), with hypertension, and YNS recognized since 2005, was involved to peritoneal dialysis (PD) treatment since October 2019. Before she was send to the nephrology department she suffered from recurrence pleural effusion, bronchiectasis and huge proteinuria, nephrotic range (in course of DM). In effect she had dispnoea and peripheral swelling. At the beginning of renal replacement therapy (RRT) she underwent some hemodialysis (HD) sessions in order to dehydrate her. Then peritoneal catheter was implanted and PD was involved. Despite middle-strong fluids were used to performed PD treatment , overhydration with coexisting dispnoea were still present in our patient. Ultimately, after nine months of PD, she was transferred to HD treatment.
Conclusions: PD treatment seems to be not enough for patients suffering from ESRD and YNS with recurrent pleural effusion and respiratory insufficiency. In such patients we recommend hemodialysis rather than peritoneal dialysis. Hemodialysis is much more effective in dehydration of the patient. This improve the patient's status and the quality of live.

Keywords: yellow nail syndrome, peritoneal dialysis

SIMULTANEOUS ARTERIAL AND VENOUS THROMBOSIS - CASE REPORT

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Background: We present to you the case of an 83 years old female patient, who was admitted to the hospital for dyspnoea due to congestive heart failure, paroxysmal atrial fibrillation, chronic kidney disease, and severe hypoglycaemia.
Case Report: The patient has a medical history of diabetes mellitus. In the Emergency Department, the hypoglycaemia was treated and the patient was transferred to the Cardiology Unit after a possible acute pulmonary embolism was suspected. A CT-scan angiography was performed which objectified the presence of bilateral pulmonary embolism at the level of the lower pulmonary lobes while, incidentally, also showed the presence of a 22/37 mm thrombus at the level of the ascending aorta. Neoplasia or thrombophilia were excluded. Severe metabolic acidosis was diagnosed. The multidisciplinary team began with 24 hours of conservative treatment, and then decided to continue the administration of low-molecular-weight heparin. After the two-week-long administration of the heparin and the improvement of the treatment of congestive heart failure, a new CT-scan revealed the disappearance of the thrombus from the ascending aorta.
Conclusions: The particularity of this case was determined by the lack of a major risk factor for this disease, like an active neoplasm or thrombophilia. Despite that, dehydration alongside the procoagulant status of chronic kidney disease, metabolic acidosis, and the presence of paroxysmal atrial fibrillation had had an important role to play.

Keywords: congestive heart failure, diabetes mellitus, acute pulmonary embolism

MILIARY PULMONARY TUBERCULOSIS AFTER INTRAVESICAL BCG ADMINISTRATION IN A HIGH-GRADE BLADDER CANCER

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Background: Bacillus Calmette-Guérin (BCG) immunotherapy is considered as the gold standard treatment for non-muscle invasive bladder cancer at high risk of progression or recurrence. Nevertheless, it could be associated with the wide spectrum of adverse effects. The pulmonary involvement is observed only in 0.3-0.7% of treated patients.
Case Report: 62 years old patient, who was diagnosed with high-grade T1 (T1HG) bladder cancer, after transurethral resection (TURB) and re-TURB, with a history of diabetes mellitus type 2, hypertension, dyslipidemia and coronary artery disease was admitted to the Urology Department. On admission he presented features of acute liver failure and right ventricular heart failure, accompanied by high fever, general malaise and elevated inflammatory response markers, which occurred after the first intravesical BCG instillation. The immunotherapy was started two weeks before hospitalization. The patient was relocated to the Pulmonology Department in serious general condition, presenting features of respiratory failure, decompensated heart failure and hectic fever up to 39?C. The BAL findings were positive for Mycobacterium tuberculosis complex in genetic testing. A chest CT scan pointed to multiple lung changes which composed a picture of miliary pulmonary tuberculosis with concomitant oedematous lesions. The patient was treated with passive oxygen therapy, broad-spectrum antibiotics, itraconazole, systemic corticosteroids and antituberculosis drugs (intensive and continuation phases for 6 months). There has been complete resolution of fluid in the pleural cavities after 2 months.
Conclusions: Our literature search yielded 35 similar case reports published so far. Moreover, among them only 1 occurred after the first dose of BCG instillation as in our report.

Keywords: miliary tuberculosis, BCG immunotherapy, bladder cancer

SLEEP-RESPIRATORY OVERLAP SYNDROME IN AN OBESE, HEAVY-SMOKER, CARDIAC ELDERLY WOMAN – A CONTINUOUS CHALLENGE FOR THE CLINICIAN

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Background: In the context of COVID-19 pandemic, underlying pulmonary and cardiovascular disorders present an increased probability of infection and associated adverse outcomes, including respiratory failure and admission to ICU. COVID-19-related mortality shares multiple risk factors with obstructive sleep apnea (OSA), posing diagnostic and therapeutic challenges for the clinician.
Case Report: A 66-year-old woman is admitted with respiratory failure symptoms, persistent over the last 3 days, in the context of progressive nocturnal snoring, apnea episodes and diurnal somnolence in the last 3-5 years. She has a history of heavy smoking, heart failure, ischemic heart disease, hypertension, obesity and was recently hospitalized for bronchopneumonia with type II acute respiratory failure, needing mechanical ventilation due to a severe SARS-CoV-2 infection. Chest imaging identifies mixed interstitial and alveolar infiltrates, while lab tests detect inflammation and moderate hypoxemia and hypercapnia under nasal oxigenotherapy. Bacterial sputum culture was not performed. Further investigations (spirometry and sleep study) lead to an overlap diagnosis of COPD (55% FVC, 33% FEV1) and moderate OSA (18 AHI, 22 ODI), coupled with obesity-hypoventilation syndrome. Under dual bronchodilator treatment, nocturnal BiPAP therapy, and diurnal and nocturnal oxigen therapy, alongside the pharmacological treatment of the coexisting disorders, the evolution is slightly favorable, with improvement of symptoms, sleep, gasometry parameters.
Conclusions: Given the profound impact SARS-CoV-2 infection has on multiple underlying diseases, patients with OSA can be considered at high risk of poor outcomes. This is a potential challenge clinicians should bear in mind, so as to ensure adequate management of OSA in COVID-19 patients.

Keywords: COPD, obstructive sleep apnea, overlap syndrome, respiratory failure, COVID-19

ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICES OF DOCTORS REGARDING PALLIATIVE CARE

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Introduction: Palliative Care is an interdisciplinary approach aimed at optimising quality of life and mitigating suffering among people with serious complex illnesses. However, less than 2% of those who need it receive palliative care in India. This study explores the knowledge, attitude and practices towards palliative care among doctors in the Indian setting.
Methods: A 14-item questionnaire was prepared to assess the knowledge, attitude and practices regarding palliative care among doctors. It was distributed in the form of an online questionnaire in google forms.
Results: A total of 368 doctors completed the questionnaire. Only 51% of respondents had been educated about palliative care during the course of their training. While just 13% believed that by referring to palliative care, doctors were giving up on their patients, 50% said they were uncomfortable in discussing death and dying with their patients. 67% of respondents believed it was extremely important to educate themselves regarding palliative care apart from their routine practice. 84% responded that lack of discussion in medical programs made them less confident to deal with these issues.
Conclusions: Our results reveal that although the attitude of most doctors regarding palliative care was positive, most are unaware of the need and scope of palliative care. There is a need to incorporate palliative care in medical education, and develop the primary palliative care skills of all clinicians.

Keywords: Palliative Care, Knowledge, Attitude, Practices, Doctors,

TREATING COMMUNITY ACQUIRED PNEUMONIA (CAP): FROM EVIDENCE BASED MEDICINE TO THE BATTLEFIELD

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Background: Living in the era of evidence based medicine, we tend to forget treating every patient as an individual. A great example is CAP, which is the infectious disease that most commonly causes death. Yet we have established many guidelines, but are all the patients or bacteria the same? To juxtapose the above we present a case of a treatment resistant CAP.
Case Report: A 28-year-old male, presented in our hospital's emergency department with a severe retrosternal chest pain, cough, fever, shivering and sweating. On clinical examination the patient was tachycardic, tachypneic with SpO2= 90%, BP= 81/53 mmHg and bronchial breath sounds with late inspiratory crackles could be heard in the right lung apex. Blood tests revealed a leukocytosis, increase in C – Reactive protein, transaminases and negative cardiac enzymes. On chest X-Ray consolidation of the upper right lobe and air-bronchogram was depicted. Based on the guidelines of accredited thoracic/ infectious diseases this patient should have been treated as an outpatient. But looking this case individually we choose to admit the patient in the hospital. The outcome was one week of hospitalization and treatment of a resistant pneumonia with Cefuroxime, Clarithromycin, Moxifloxacyn, nebulized bronchodilators and paracetamol.
Conclusions: This case underlines that the relegation of clinical judgment and mechanistic reasoning, and over-reliance on the reliability of clinical trials and systematic reviews is not always the best choice. Treating a CAP as an outpatient has a mortality of 3%, why not in the future try bringing that percentage closer to 0 ?

Keywords: Community acquired pneumonia, Personalized medicine, Pneumology

COAGULATION ABNORMALITIES IN PATIENTS WITH COVID-19

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Introduction: Spreading of the new SARS-CoV-2 virus resulted in large numbers of infected patients around the globe. Commonly known symptoms of COVID-19 are pyrexia, cough, anosmia, fatigue, and dyspnoea. Retrospective analysis of patients with COVID-19 showed that many of them, apart from previously mentioned symptoms, had abnormalities in the coagulation system which were similar to those seen in disseminated intravascular coagulopathy (DIC) or thrombosis microangiopathy (TMA). Moreover, patients with severe COVID-19 had a tendency to thromboembolism, especially in the pulmonary circulation.
Methods: This systematic review was done with an analysis of published studies concerning coagulopathy in COVID-19 obtained from PubMed.
Results: Researchers showed that coagulopathy associated with COVID-19 causes an increased risk of death. Coagulation abnormalities in COVID-19 include increased D-dimer concentration, slightly prolonged prothrombin time (PT), thrombocytopenia <100 000/ul, and high fibrinogen concentration. However, studies showed that a sudden decrease in patients' fibrinogen concentration was frequently observed shortly before death. The pattern of coagulopathy in COVID-19 differs from that seen in DIC associated with sepsis where thrombocytopenia is usually more profound and D-dimer concentrations are lower.
Conclusions: D-dimer concentration, prothrombin time, and platelet counts can help identify patients with a high risk of severe COVID-19 and death.

Keywords: COVID-19, coagulopathy, D-dimer

MULTIPLE MYELOMA IN A 62-YEAR-OLD MALE - THE CASE REPORT ON WHY WE SHOULD NEVER GIVE UP ON A PATIENT

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Background: Multiple myeloma (MM) is still considered to be an incurable disease and patients with Relapsed-Refractory MM rarely survive longer than 12 months. It is more difficult to achieve a response after many chemotherapy lines. Kyprolis (carfilzomibe) is a new generation selective proteasome inhibitor. Due to high cost it's availability in Poland is still very limited. 6 months of therapy can cost more than 315 000 PLN.
Case Report: A 62-year-old male diagnosed with multiple myeloma (established in 2002), after 6 lines of chemotherapy, two stem cell transplantations was admitted in January 2020 to the Department of Hematooncology with a life threatening disease progression. Patient was in a severe general condition, reported excruciating bone pain. CT scan showed scattered osteolytic foci, multi-level compression fractures and paravertebral neoplasm infiltration. Thanks to a donation from AMGEN, Kyprolis and Dexamethasone therapy began on January 23, 2020. The patient was also qualified for palliative radiotherapy of spine lesions.
Conclusions: Already after 3 cycles of KD chemotherapy, the patient obtained a very good response to the treatment. Currently, after 8 cycles of chemotherapy, the monoclonal protein has been reduced from 6.82g/dl to 0.04g/dl - by 99%. A significant improvement in the clinical condition, as well as in the efficiency of the bone marrow in the production of blood morphotic elements was also achieved. The patient experiences much less pain. The availability of newest therapies is of a critical value for patients with hematological neoplasms, that can significantly prolong their lives. Polish oncology needs much more funds.

Keywords: multiple myeloma, carfilzomib, proteasome inhibitor, salvage therapy

Neurology and Neurosurgery

PRIMARY ANGIITIS OF THE CENTRAL NERVOUS SYSTEM IMITATING GLIOBLASTOMA MULTIFORME AND DEMYELINATING DISEASE OF THE CENTRAL NERVOUS SYSTEM

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Background: Primary cerebral angiitis (PANCS) is a very rare disease in which the autoimmune process causes large and medium-sized (pPACNS) or small vessels (svPACNS) to close, resulting in impaired cerebral perfusion and ischemia. In contrast, CNS tumors are the most common solid tumors in children and have the highest mortality among all cancers in this group.
Case Report: A 16-year-old patient was admitted to neurosurgery department with symptoms of severe, paroxysmal headaches and blurred vision that was accompanied by speech apraxia, symptoms of paresis of the upper limb, and lost of consciousness. The Magnetic Resonance Imaging (MRI) of the head revealed several irregular-shaped lesions which displayed enhancement peripherally after contrast medium administration. The largest multifocal change stretched multidirectionally around the triangle of lateral ventricle and also the greater part of the parietal lobe. The MRI image suggested a diffuse neoplastic process. Performing multiple tests including CSF tests, CNS imaging, evoked potentials - EP, magnetic resonance spectroscopy (MRS) and above all a biopsy of the lesion. A fine - needle biopsy was non-diagnostic. Open biopsy was decisive - allowed to collect the right amount of material with appropriate inflammatory infiltration. Contrary to literature reports, the MRS result was non-specific and did not contribute to the proper diagnosis of PANCS. Differential diagnosis also included PCNSL lymphoma and CNS demyelinating diseases.
Conclusions: Appropriate PANCS treatment guidelines are still missing. The proper diagnosis of PANCS was a diagnostic challenge due to the unclear clinical and radiological course. Diagnosis supported by biopsy of the lesion is crucial. The biopsy was diagnostically relevant and relatively safe for the patient.

Keywords: primary angiitis of the central nervous (PANCS), brain biopsy, glioblastoma multiforme, magnetic resonance spectroscopy (MRS)

RAPIDLY PROGRESSIVE BEHAVIORAL CHANGES IN 39 Y.O. PATIENT

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Background: Frontotemporal dementia (FTD) provides group of neurodegenerative disorders of frontal and/or temporal brain lobes. These areas are responsible for most complex cognitive functions. This disease occurs in population with a frequency of approximately 15/100,000. First symptoms appear usually after the age of 65 and cause usually within next 10 years. There are three similar clinical syndromes: 1) fronto-temporal dementia (frontotemporal dementia), (2) progressive aphasia nonfluent (progressive aphasia, PA) and (3) semantic dementia (semantic dementia, SD). However, due to the fact that FTD is a heterogeneous neurodegenerative disorder with diversified symptoms, there is a challenge to make a right diagnosis.
Case Report: A well-functioning 39-year-old man in a short period of time began to show rapidly progressing behavior changes. Disturbing symptoms were dominated by: general apathy, difficulty with social interactions , impulsive behavior, incomprehensible/inadequate aggression, also towards family members and binge eating. The man was admitted to the hospital and underwent a thorough diagnostic process to determine the cause of progressive behavioral changes. After rule out other conditions or diseases that cause similar symptoms and based on the characteristic changes in imaging scans, frontotemporal dementia was diagnosed, which typically does not occur in patients of this age.
Conclusions: The presented medical case shows the importance of several aspects of diagnostics such as family history interview, physical examination and diagnostic imaging. Only a combination of these three above-mentioned elements can help in making the final diagnosis, hindered by the unusual course of the disease.

Keywords: behavioral changes, FTD, dementia, diagnostic difficulties, neurodegenerative disease

THE LINK BETWEEN MTHFR GENE POLYMORPHISMS AND ISCHEMIC STROKE DEVELOPMENT IN UKRAINIAN POPULATION

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Introduction: Hyperhomocysteinemia is one of the common causes of blood vessels pathology. Homocysteine metabolism depends on the activity of the methylenetetrahydrofolate reductase (MTHFR). Therefore, the aim of our work was to analyze the possible association between the common polymorphisms of the MTHFR gene (C677T and A1298C) and the development of ischemic stroke (IS) in the Ukrainian population.
Methods: The whole venous blood from 170 IS patients and 124 control subjects was used for case-control study. The polymorphism C677T (rs1801133) and A1298C (rs1801131) of the MTHFR gene were genotyped using the PCR-RFLP method (polymerase chain reaction followed by the analysis of the restriction fragments length).
Results: The distribution of MTHFR C677T-genotypes in control group was: CC – 46.0%, CT – 48.4%, TT – 5.6%. In stroke patients: CC – 52.3; CT – 35.9, TT – 11.8% (P = 0.044). Regression analysis revealed that the risk of IS in TT-genotype carriers is 2.3 times higher (CI = 1,111-5,449, P = 0,049), than in C-allele carriers. The distribution of MTHFR A1298C-genotypes in control subjects was: AA – 46.0%, AC – 44.3%, CC – 9.7%. In stroke group: AA – 42.3%, AC – 37.1%, CC – 20.6% (P = 0.039). Analysis under the recessive model showed that CC-homozygotes has a 2.3-fold higher risk of stroke occurrence compared to A-allele carriers (CI = 1,323-3,449; P = 0.027).
Conclusions: The C677T and A1298C polymorphisms of the MTHFR gene are related to ischemic stroke in the Ukrainian population. The risk of stroke in carriers of TT-genotype (C677T-polymorphism) and CC-genotype (A1298C-polymorphism) is higher compared to wild-type allele carriers.

Keywords: Gene polymorphism, ischemic stroke, MTHFR, PCR

COMPREHENSIVE GENETIC ANALYSIS OF A HUNGARIAN AMYOTROPHIC LATERAL SCLEROSIS COHORT

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Introduction: Amyotrophic lateral sclerosis is a fatal neurodegenerative disease, which affects lower- and upper motor neurons. About 5-10% of the cases show a positive family history, while the other cases remain sporadic. Until now more than 120 genes have been associated with the disease. Our aim was to investigate the role of 35 genes in the Hungarian population.
Methods: 07 non-related sporadic ALS patients were recruited for this project. Our study was based on new generation sequencing techniques and repeat length analysis. A control group of 200 healthy individuals was used for comparison. The detected variants were validated via Sanger sequencing.
Results: In around 10% of the patients we were able to detect a pathogenic hexanucleotide repeat expansion in the C9orf72 gene. By using new generation sequencing methods we identified 31 variants in 16 major ALS genes. The most frequently mutated genes were the following: NEK1 (5.6%), NEFH, SQSTM1 (3.7%), KIF5A, SPG11 (2.8%), ALS2, CCNF, FUS, MATR3, TBK1 and UBQLN2 (1.9%). Potentially pathogenic variants were detected in one person in the ERBB4, FIG4, GRN and SIGMAR1 genes. However, we could not confirm the role of an intermediate length polyglutamine repeat expansion found in the gene ATXN2 as a risk factor for ALS.
Conclusions: With the combination of fragment length analysis and new generation sequencing techniques we were able to identify a possibly pathogen variant in 41% of the patients. Our results contribute to broadening the knowledge about the genetic background of ALS.

Keywords: amyotrophic lateral sclerosis, ALS, genetics, neurogenetics

GAMMA DELTA T AND THEIR SUBSETS IN MULTIPLE SCLEROSIS - DIFFERENCES BETWEEN HEALTHY CONTROL, RELAPSE AND REMISSION PATIENTS

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Introduction: Multiple sclerosis (MS) is a chronic disease, characterized by demyelination causing disrupted transmission of electrical impulses in the CNS, with immune system playing an important role in pathogenesis. gamma?T cells, a subset of T cells expressing specific type of T-cell receptor (TCR), have a prominent role in recognizing lipid antigens and the ability to release pro-inflammatory cytokines, such as IL-17 and IFN-gamma. They have been proven to take part in the pathogenesis of several auto-immune diseases.
Methods: The aim of the study is to assess the percentage of gamma?T, TCRgamma?dim and TCRgamma?bright gamma?T cells in the MS patients during the time of relapse and remission. The study involved 44 patients diagnosed with relapsing-remitting MS (22 during relapse, 22 during remission) and 29 healthy volunteers (HV). Collected blood samples were stained with anti-human antibodies: anti-CD3, anti-TCRgamma?. Results were statically analyzed using Statistica 12. Statistical significance was assessed using Kruskal-Wallis test.
Results: The percentage of gamma?T cells is higher in the group of HV, however we discovered that the percentage of TCRgamma?bright is higher in patients in comparison to the control group. There is a significant difference (p=0.0148) between the percentages of TCRgamma?bright between the patients during the time of relapse (median 88.8%, IQR 65.16%) and remission (median 24.4%, IQR 20.1%) as well as (p=0.0148) between TCRgamma?dim during the relapse (median=10.3%, IQR=66.00) and remission (median=75.7%, IQR=20.10).
Conclusions: Although the specific role of gamma?T cells in pathogenesis of MS is not fully understood, the results indicate their involvement. Further studies are needed to confirm these observations.

Keywords: gdT cells, ??T cells, multiple sclerosis, relapse, remission

PONTINE CAVERNOUS MALFORMATION: CASE REPORT

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Background: Cavernous malformations (CMs) are bening vascular abnormalities with prevalence of 0.5%-0.9% in population. CMs of the pons are rare and usually have a higher rate of bleeding comparing to other localisations. Surgical resection is recommended for symptomatic CMs and is considered as a high-risk procedure.
Case Report: A 55-year-old woman presented a history of dysphagia and moderate left-sided weakness. It is known that the patient had an episode of spontaneous intracerebral hemorrhage in the pons. Stereotactic surgery with CyberKnife had no effect and her clinical condition became worse with repeated intracerebral hemorrhage. Magnetic resonance imaging (MRI) revealed multiple CMs in the brain, the largest one in the right side of pons (2.3x2.2x1.5 cm) in size. Considering clinical manifestations and radiological findings total resection of the pontine CM was performed using neuronavigation throught posterior cranial fossa. During early rehabilitation process the patient noted a decrease of weakness in left limbs. Computed tomography scan (CT scan) showed normal postoperative findings and no bleeding signs. Neurological examination revealed the absence of dysphagia and mild hemiparesis of the left side. The patient was discharged with recommendations to continue rehabilitation with following neurologist consultation.
Conclusions: Multiple CMs are considered as a familial form. Most of the CMs are asymptomatic, but clinical manifestations may be variable, however the risk of bleeding is 1% per year in hereditary cases. Surgical resection is the best treatment option. Posterior cranial fossa approach should be considered as a safe exposure.

Keywords: pons, cavernous malformation, neurosurgery

INTERNATIONAL, MULTICENTER STUDY ON THE INFLUENCE OF SYRINGOMYELIA ON THE POSTOPERATIVE OUTCOMES IN CHIARI MALFORMATION TYPE I.

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Introduction: Syringomyelia accompanies Chiari malformation type I in up to 70% of diagnosed patients. Its presence can cause irreversible damage to the spinal cord, resulting in the persistence of symptoms after successful decompressive surgery. The aim of this study was to evaluate the influence of syringomyelia on the postoperative outcomes in Chiari malformation type I patients.
Methods: A retrospective analysis of symptomatic Chiari I patients from Neurosurgical Departments in Hamburg, Gdansk, and Wroclaw, who underwent posterior fossa decompression with duraplasty or with additional tonsillectomy between 2010 and 2018 was performed. Patients with incomplete imaging and clinical data were excluded. Outcomes were evaluated during the hospital stay and in the outpatient clinic visits and subsequently assessed with Chicago Chiari Outcome Scale (CCOS).
Results: A total number of 18 symptomatic patients from three different Neurosurgical Departments were included in the study. 10 patients were diagnosed with accompanying syringomyelia. 15 patients underwent decompression with duraplasty, whereas the remaining 3 underwent additional tonsillectomy. Patients with syringomyelia showed lower CCOS values comparing to patients without a syrinx. Moreover, 70% of syringomyelia-Chiari patients improved clinically, when 87.5% without syrinx improved.
Conclusions: Our results indicate that patients with syringomyelia are less likely to improve after decompression surgery. These findings are consistent with existing literature, which suggest irreversible microstructural alterations caused by the syrinx cavity, leading to symptoms of persistence. Furthermore, we conclude that incomplete clinical improvement is not associated with unsuccessful surgery, or rather with spinal cord damage.

Keywords: chiari malformation type I, syringomyelia, Chicago Chiari Outcome Scale

THE ROLE OF TRANSCRANIAL MAGNETIC STIMULATION IN THE TREATMENT OF MOTOR SYMPTOMS OF PARKINSON'S DISEASE

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Introduction: Parkinson's disease (PD) is a neurodegenerative disease that is clinically manifested by a combination of motor and non-motor symptoms, which are caused by complex neurotransmitter dysfunction. Nowadays, the method of rhytmic transcranial magnetic stimulation (rTMS) in the treatment of PD is actively used in clinical practice. The method has a great therapeutic potential because of it’s effectiveness in improving motor activity, reducing cognitive deficits and symptoms of depression, with fewer number of side effects compared to pharmacotherapy [Chou Y., 2019, Yang C., 2018, Machado S., 2016]
Methods: analysis of electronic databases about results of the study therapeutic effects of rTMS in PD treatment.
Results: rTMS can induce neuronal plasticity by modulating neural connections in the human brain. The effectiveness of rTMS was proved in a double-blind placebo-controlled study, which showed a significant improvement in motor symptoms in patients with PD compared with the placebo group [Zanjani A., 2015]. According to a meta-analysis of 23 studies with a total of 646 patients with PD, there was shown the presence of significant short- and long-term effects of rTMS on the improvement of motor manifestations of PD [Yang C et al., 2018]. It was found that stimulating the primary motor cortex (M1), with the high-frequency rTMS protocol shows positive effects which are significantly more pronounced than at low-frequency rTMS. At the same time, according to Matsumoto H., (2017), the most effective modality for improving motor symptoms is the stimulation of the primary motor cortex with a frequency of 5 Hz (low-frequency rTMS), which increases the excitability of the zone. The objectification of treatment results by diagnostic neurophysiological methods is promising. Kolmancic K. (2019) confirms the change in excitability and plasticity of the sensorimotor cortex in the early stages of PD: depending on the patient's sex, interhemispheric imbalance and asymmetry are detected. It is noteworthy that recent studies have shown a correlation of neurophysiological disorders in the primary motor cortex with the severity of bradykinesia in patients with PD, namely a decrease in the amplitude and latency of intracortical inhibition. In turn, dopaminergic therapy has been shown to improve motor activity to the same extent as neurophysiological parameters. [Kojovic M., 2015, Bologna M., 2018].
Conclusions: The results of the literature data are promising but contradictory. Therefore, it is important to further study the effectiveness of TMS not only on motor symptoms, but also on non-motor manifestations of PD, as well as the study of the dynamics of neurophysiological parameters in correlation with the clinical manifestations of the disease.

Keywords: Parkinson's Disease, Transcranial Magnetic Stimulation, Neurophisiological Study

GIANT SPINAL SCHWANNOMA IN A YOUNG WOMAN: CASE REPORT

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Background: Spinal schwannomas are benign nerve sheath tumours within the spinal canal. They are one of the most common intradural spinal tumours, making up almost one-third of primary spinal neoplasms. Giant spinal schwannoma is rare and is defined as a tumour that extends over two or more vertebral levels, erodes vertebral bodies, and extends into extraspinal space.
Case Report: A 28-year-old female presented with a 10-year history of progressing severe low back pain, associated with radicular pain and numbness in both legs, a kyphotic deformation that started 1 year ago. Complete clinical examination was limited due to severe back and leg pain. Magnetic Resonance Imaging (MRI) revealed a large multilobulated tumour extending from the T9 to L3, resulting in severe spinal cord compression and vertebral body erosion. Patient underwent a single-stage posterior approach for complete resection of the tumour with stabilization of the vertebral column. Pathological examination confirmed the diagnosis of schwannoma (WHO grade 1). During the one-year follow-up patient had right knee extension and foot dorsiflexion weakness (4/5), great toe extension weakness (3/5), hypoesthesia corresponding to the affected nerve roots. Three follow-up MRIs (1, 12 and 36 months after treatment) showed no residual masses or recurrent disease.
Conclusions: Giant spinal schwannomas growth pattern in all directions makes surgery technically challenging. The approach, resectability, and stability of the spine are important perioperative considerations for the surgeon.

Keywords: spinal schwannoma, back pain

DESMOID TUMOUR, A RARE COMPLICATION OF A NEUROSURGERY PROCEDURE: CASE REPORT

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Background: Desmoid tumour (DT) also known as aggressive fibromatosis is a relatively slow-growing tumour affecting musculoaponeurotic structures that arise from mesenchymal cell lines. It has benign systemic effects but locally invasive histology with high recurrence rate. DT results from locally invasive proliferation of well-differentiated fibroblasts and presents clinically as a progressively expanding soft tissue mass that is uncomfortable or painful due to compression of the adjacent structures. With an annual incidence of approximately 3 to 4 per million, DT is a very rare disease. It is most common in middle-aged women, although can be seen in children. DT is typically localized in the abdominal wall or proximal extremities. The majority of DTs (85–90%) develop sporadically. About 10–15% of DTs are associated with a rare autosomal - dominant disease, familial adenomatous polyposis, however, some of DTs have been reported to occur after trauma or surgical procedures.
Case Report: We herein describe the case of a 41-year-old female patient with a history of a hemangioblastoma surgical resection 2 years earlier with the lesion in the deep layers in the operational approach. Histopathological analysis revealed spindle-cell hyperplasia with low pleomorphism, peripherally infiltrating skeletal muscle. Surgical mass removal was undertaken by a straight 10 centimeters vertical incision in the occipital area.
Conclusions: This report highlights the possibility of a desmoid tumour occuring after neurosurgical procedures. Complete surgical resection may be insufficient due to its extensively infiltrative behavior and recurring nature. Adjuvant radiotherapy and chemotherapy in selected cases may be necessary for local control of disease.

Keywords: Desmoid tumour, surgery, aggressive fibromatosis, head

Orthopaedics, Physical Therapy and Rehabilitation

RECURRENT PATELLAR DISLOCATION – MPFL RECONSTRUCTION AS THE GOLD STANDARD TREATMENT

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Introduction: Patella dislocation represent 3,3% of all knee injury and mostly pertain adolescents and children. Almost 90% of dislocations occur laterally, which result in medial patellofemoral ligament (MPFL) damage. Unfortunately the chance of re-dislocation on the ipsilateral side among patients under the age of 18 is up to 50%. Numerous studies describe MPFL reconstruction as the gold standard in the treatment of patellofemoral instability. The aim of the study Presentation of the treatment results of recurrent patellar dislocation with use of MPFL reconstruction. Additionally, comparison of receiving outcomes with the results described in the world literature.
Methods: Retrospective analyzation of the medical records of the University Children's Hospital in Lublin patients, who were treated between 2016-2018 with the MPFL reconstruction.
Results: 25 patients (11 boys-44%, 14 girls-56%, of the age 14-16) were qualified. They sustained at least 3 dislocations and had MRI-confirmed MPFL injury. Surgical treatment utilising allogenic transplants from the fasciae latae and postoperative orthosis treatment and intensive rehabilitation leaded to the full recovery after 6-8 months. After 12 months patients were assessed according to the Karlström & Olerud Score.23 (92%) patients obtained excellent, good, or satisfactory results, 2 (8%) patients poor results which were associated with complications.
Conclusions: The first PD can be treated conservatively. However, MPFL reconstruction seems to be the best currently available treatment for recurrent patellofemoral instability. In case of anatomical risk factors that could lead to re-dislocation, additional surgical options should be considered. The results of treatment in our clinic are similar to those described in the literature.

Keywords: medial patellofemoral ligament (MPFL), MPFL reconstruction, patella dislocation, patellofemoral instability

ASSESSMENT OF QUADRICEPS WEAKNESS IN ASSOCIATION WITH SYMPTOMATIC AND RADIOLOGICAL OSTEOARTHRITIS OF KNEE

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Introduction: Primary knee osteoarthritis is a major cause of impairment of mobility of the lower limb, making effective rehabilitation particularly important. Quadriceps weakness is one of the initial clinical findings among persons with knee osteoarthritis which appears even before patient-reported symptoms and may play a vital role in disease advancement. This study analyzes the unique link that quadriceps weakness forms with symptomatic and radiographic knee osteoarthritis, to substantiate the concept that increasing the strength of quadriceps muscle may halt the progression of the disease or at least, reduce the pain and disability associated with this disease.
Methods: 50 patients with complaints of knee pain, aged above 40 years, were evaluated for their radiological grade of knee osteoarthritis using Kellgren-Lawrence (K/L) grading criteria, isometric quadriceps muscle strength using a modified hand-held dynamometer, pain and disability using Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) questionnaire, all on the same day in this cross-sectional study.
Results: There is a significant negative correlation between K/L grade and maximum strength of the quadriceps muscle, r (50)= -0.28 ($p<0.05$). There is a highly significant negative correlation between WOMAC score and strength of the quadriceps muscle, r (50) = -0.41 ($p<0.05$).
Conclusions: Our study established a stronger association between quadriceps strength and functional disability, indicating that even though patients had higher or greater joint destruction on knee radiographs, increasing the strength of quadriceps muscle might reduce the pain and functional disability.

Keywords: Osteoarthritis, Dynamometry, Quadriceps

THE ROLE OF THE BIOPSYCHOSOCIAL MODEL IN MYOFASCIAL PAIN SYNDROME

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Introduction: MPS is considered one of the most common chronic musculoskeletal pain syndromes. TrPs are hypersensitive taut bands that appear in specific areas of the muscles both in two genres, but in a different ratio. The biopsychosocial model which interacts with physiological, psychological and social factors seems to worsen the clinical presentation of these patients.The biopsychosocial model is considered to be the most heuristic approach to chronic pain.
Methods: In this systematic review, it is discussed how the biopsychosocial model affects the progress of the syndrome and the treatment outcome.We conducted a Systematic Review and we screened PubMed for clinical trials,randomized controlled trials, reviews, systematic reviews and meta-analysis, to find the role of the biopsychosocial model in MPS between 1978-2020. We use mesh terms ‘’Myofascial Pain Syndrome’’ AND ‘’psychology” [subheading] AND ‘’sociological factors’’.
Results: We identified 43 results between 1978-2020. 19 excluded because the research was not relevant to the topic and they did not meet the inclusion criteria or year of publication. Only 24 articles were included in our systematic review. Chronic pain and psychological distress frequently coexist. It seems that psychological and social factors worsen the quality of life and they perpetuate the existing pain.
Conclusions: The exact etiology of MPS is not clear yet and further studies need to support the main cause. A biopsychosocial approach in patients with MPS is essential to improve their quality of life and to regain their function. Physicians should not ignore the importance of this model for the treatment of the various issues facing these patients.

Keywords: Trigger Points, Myofascial Pain Syndromes, treatment, rehabilitation, pathophysiology

IMAGING DIAGNOSIS IN PATIENTS WITH LUMBAR SPINE INJURY.

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Introduction: It is estimated that about 30 out of 1 million people have suffered a spinal injury with spinal cord injury. Among them, there are about 4 times more men than women. The injury to the lumbar spine in 80-90% of cases is traumatic. The aim of the study was to assess the possibilities of CT and MRI in patients with spine injuries in the lumbar region.
Methods: The study included a group of 22 patients with 1 or 2-limb paresis. The patients were referred for CT and MRI of the spine to evaluate post-traumatic lesions. All CT examinations were performed at the Department of Medical Radiology, UM of Lublin, and MRI examinations at the Department of Interventional Radiology and Neuroradiology, UM of Lublin.
Results: In the CT examination in 17 patients fracture of the vertebral bodies in the lumbar spine was found (group I), and in this group 2 patients additionaly had hernia. 5 patients were diagnosed with intrathecal hernia (group II) without coexisting fractures. MRI studies confirmed vertebral body fractures diagnosed in CT in group I, and also revealed edema or edema-ischemic changes in the spinal cord in 12 patients, and confirmed hernias.
Conclusions: In the diagnosis of diseases and injuries of the spine, CT scan - as the method of choice - allows an excellent assessment of bone elements. Magnetic resonance imaging allows visualization of all spinal fragments and assessment of possible changes within the spinal cord.

Keywords: Computed tomography, magnetic resonance, spinal cord injury

CAR CRASH LEG INJURY WITH HIGH GRADE SOFT TISSUE DAMAGE

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Background: Open fractures of lower extremities resulting from car accidents are very common and stand for 34.1% of all injuries. The highest incidence is in males aged 15-19 and is at 54.5 per 100,000 persons per year. They mostly affect phalanges (45%), but when it comes to long bone fractures, tibia and fibula are affected in 11.2%.
Case Report: A 19 y/o patient was brought into the ER with a visible injury of the left leg, after a car accident which occurred as he was driving and hit a guardrail. He suffered from an open fracture of the left leg, with a skin defect of approximately 65cm, extending from mid thigh to below the ankle - type IIIa Gustilo Anderson classification. CT and X-ray revealed fractures of the medial condyle of femur and lateral malleolus. Vascular and nerve structures were undamaged. No other injuries were present, his tox screen came back negative. The ankle joint was repositioned in the ER and surgery followed. An external fixator was placed for both fractures, but due to the extent of the skin defect, the surgeon was unable to close the wound. He required plastic surgeries to cover the skin defects. Due to 10 months long external fixation, his knee remained in flexure contracture. He is now in physical therapy.
Conclusions: External fixation is mandatory for open injuries with severe soft tissue damage that would require a series of reconstructive surgeries with full thickness skin grafts to cover the defects.

Keywords: car accident, open fracture, external fixation, soft tissue damage

GENERAL PRACTITIONERS' OPINION ON THE DEMAND AND AVAILABILITY OF SPORTS MEDICINE IN LITHUANIA

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Introduction: In Lithuania neither medical studies nor a general practitioners (GP) residency includes education about consulting physically active patients. As sports are becoming increasingly popular there is a need for specialists who can consult such patients with confidence.
Methods: In 2020 we conducted a survey in hospitals and medic groups online. 104 surveys were collected. Statistical analysis was done using "Microsoft Excel 2010", "R Commander". Results were deemed statistically significant when $p<0,05$.
Results: The median of work experience was 5 years (0-42). 58,7% of GPs think they do not always have the competence to consult physically active patients, that does not depend on work experience, institution, region ($p>0,05$). 87,5% of interviewees consult patients they believe would benefit from a program created by a sports medicine physician (SMP), 79,8% agree there is a need for this specialist in their region. The possibility of getting a SMP consultation depends on the region ($p<0,05$). 93,3% of respondents wish they could send patients directly to a SMP. Most GPs believe patients with obesity, musculoskeletal, cardiovascular, neurological conditions would benefit from a SMP consultation.
Conclusions: A large number of GPs think they do not always have the competence to consult physically active patients. More than half agree that a program by a SMP would be beneficial and there is a need for this specialist in their area. Almost all of the respondents would like to directly send their patients to a SMP and the majority think people with various health issues would benefit from such consultations.

Keywords: sports medicine, sports medicine physician

RADIOLOGICAL ANALYSIS OF TIBIAL SHAFT FRACTURES TREATED SURGICALLY IN PAEDIATRIC POPULATION.

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Introduction: Tibial fractures are the most common fractures in among long bone fractures of paediatric population. It is said that nearly 40% of all tibial fractures concern the shaft of the tibia. This type of paediatric fracture should be treated surgically with use of K-wires, elastic stable intramedullary nailing (ESIN), expert tibial nail (TN) or osteosynthesis plates.
Methods: 71 paediatric patients of Polish Mother's Memorial Hospital Research Institute with surgical treatment of tibial shaft fracture were accepted to study. The axial symmetry in anatomical position and lateral view were assessed in control X-ray pictures. Side of fracture, presence of union, removal of implant and possible complications were evaluated. Obtained data was statistically analysed.
Results: 71 paediatric patients (61 males, 16 females), mean age =10.92 years SD=3.97) were treated surgically for tibial fracture. In 95% (68 cases) of patients union was present, in 73.5% patients TEN were used, 11.7% of cases had TN implanted, other 11,7% patients used osteosynthesis plated and in 2% of cases K-wires were used. The axial symmetry in AP view TEN implants was 2.44o, in TN 0.95o, in osteosynthesis plates was equal 1.31o and in K-wire cases was 2.75o. Axial symmetry in lateral view TEN implants was 3.15 o, in TN 1.23o, in osteosynthesis plates was equal 0.71o and in K-wire cases was 5.50o . Complications occurred in 7% of patients.
Conclusions: All of above listed implants are good way for tibial fixation. However TEN implants are the most common ones, used in surgical tibial treatment.

Keywords: tibia fractures, paediatric orthopaedics

EVALUATION OF SOCIETY'S OPINION ON SPORTS MEDICINE AND ITS NECESSITY IN LITHUANIA

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Introduction: Consultations by the sports medicine doctor (SMD) are being provided in Lithuania since 2016 but society's opinion and knowledge have yet to be evaluated.
Methods: During 2019-2020 we shared a questionnaire in groups on "Facebook". 383 responses were collected (282 women, 97 men), with a median age of 27 years (13–95 years). Statistical analysis was performed using Microsoft Excel 2010, R Commander. Results were considered statistically significant when $p < 0.05$.
Results: Frequent barriers to physical activity were lack of time ant motivation. The Internet was a typical source of information about sports. 61.9% of the respondents had heard of the SMD. Most of these people were 51-60 years old, lived in an urban area, had a higher education, worked a sedentary job. Residents of rural areas and towns were more likely to suggest that patients to a SMD are referred by the general practitioner (GP), while residents of urban areas believe it can be done by both a GP and the specialist. People who engage in health-promoting physical activity thought that a SMD counseling would be helpful, but those who do not find it useless.
Conclusions: Lack of motivation and time are the most common reasons for physical inactivity. Of those who heard of a SMD, most lived in the city, had a university degree, worked a sedentary job, and were in the age group of 51-60. Urban residents were more aware of the referral procedure to a SMD. People who engage in health-promoting physical activity would like a SMD consultation.

Keywords: Sports medicine, sports medicine doctor, physical activity

ONE-STAGE FUNCTIONAL RECONSTRUCTION OF THE ANTERIOR COMPARTMENT OF THE THIGH AFTER FIBROSARCOMA RESECTION

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Background: Fibrosarcoma is rare, highly malignant tumor of mesenchymal cell origin. To obtain local control, wide margin surgical resection and reconstruction of the subsequent defect are necessary. To provide good surgical and functional outcome, approach must be multidisciplinary, including oncology surgeon, plastic surgeon, radiologist, oncologist, and physical therapist.
Case Report: In our case, 74 y.o. patient presented with mass in right thigh region. CT showed wide infiltrative mass in anterior compartment, lymphadenopathy in groin region. MRI showed that the mass is 14x11x30.5 cm in size and main vessels are not involved in the tumor. Bone structure was not changed. Patient underwent two surgeries: 1) Lymph node biopsy from groin region, parailiacal vessels and inquinal canal showed no signs of malignancy; therefore, it was decided to resect tumor with possibility to cover the defect and perform functional reconstruction. 2) Resection of thigh region tumor with defect closure. After the resection of the tumor patient retained a soft tissue defect over the bone and vessels, therefore, given that the patient will possibly undergo postoperative radiotherapy, high-quality tissue is required, and given the lack of anterior muscle group defect closure with multiple flaps (6 flaps: m. sartorius, m gracilis, m. biceps femoris caput longum and 3 fasciocutaneous flaps) was performed. Post-operative period was without complications, patient recovered well. Currently patient undergoes radiotherapy, physiotherapy and can already walk independently, without assistance of crutches.
Conclusions: When evaluating treatment options for sarcomas, reconstructive surgery should be considered to possibly safe the limb and provide with high-functioning outcome.

Keywords: anterior compartment reconstruction, fasciocutaneous flap, sarcoma resection

PERIPROSTHETIC HUMERAL FRACTURE MANAGEMENT FOR PATIENT WITH OSTEOPOROSIS

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Background: Periprosthetic humeral fractures are rare. These fractures mostly observe to older patients with comorbidities such as osteoporosis. In most cases diaphyseal spiral fractures of the upper arm is conservative treatment with plaster splint fixation which in this case, this method was unsuccessful. Despite high risk surgery surgical treatment showed better result.
Case Report: In 2008, the patient underwent left shoulder's arthroplasty after failure to treat proximal metaphyseal fracture of humerus. In October 2019, at the age of 85, patient broke distal third of a humerus right under the prosthesis. No parts of the prosthesis were dislocated or damaged due to the injury. The upper arm bone was fixed with a plaster cast and released home for conservative treatment. Conservative treatment was received until May 2020 when patient underwent surgical treatment. Upper arm bone pseudarthrosis resection, n. radialis neurolysis and osteosynthesis with two plates and screws. In addition to consolidation stimulation ''Osteoset'' beads were inserted. Due to patient's age and severe damage of osteoporosis it was defined as high risk surgery. Postoperative wounds healed without signs of inflammation. The rehabilitation was started timely. On August 17, 2020, positive dynamics were observed on the control X-ray. The patient no longer notes any complains and begins to carry small weight on everyday activities.
Conclusions: Despite severe damage caused by osteoporosis, osteosynthesis with two plates and screws was more successful treatment for the patient, than the initially applied conservative treatment. Severe damage of osteoporosis is not an obstacle to surgical treatment for osteosynthesis.

Keywords: Periprosthetic humeral fracture, Osteophorosis, Humerus diaphyseal fracture

THE MANAGEMENT OF A OSTEOLYSYS FOLLOWING TOTAL HIP ARTHROPLASTY USING CIRCULAR WIRE STABILIZATION

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Background: As known femoral component of cementless prosthesis may cause bone ruptures. In order to prevent rupture cerclage are tightened around the bone to fix it. Normally these wires don’t cause any side effects.
Case Report: In 2008, the patient underwent right hip total joint replacement surgery. Two cerclage wires was used to fix the proximal femur because of an displaced fracture. In January 2012, an X-ray examination revealed local femoral bone loss around the cerclage wire. At the revision was found that the stem is well fixed in the distal part and only cerclage wire in location of osthelysis was removed. In 2020, at the age of 52, the patient was hospitalized with a periprosthetic fracture. Hip revision surgery. Implant was inserted with extended femoral component of prosthesis with cementless fixation. The stem was extracted and exchanged to modular in distal diaphysis fixed femoral component. On the 7th post-operative day , patient moves independently using the crutches. Timely rehabilitation process is initiated and no complaints are noted in the process of further recovery.
Conclusions: However, bone reabsorption is rare complication following the use of cerclage wire in proximal femur, the possible damage of periosteal microcirculation shuld be taken in account using this type of ostheosynthesis during total hip replacement. Bone reabsorption is rare complication following total hip replacement. Despite the significant bone deficit for the particular patient, it has been possible to maintain full limb function for this patient.

Keywords: Osteolysys, Total hip arthroplasty

ANALYSIS OF DISTAL RADIUS FRACTURES SURGICAL TREATMENT

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Introduction: The distal radius fractures usually occur in 2-2,5cm distance from the radiocarpal joint space and are one of the most common osteoporotic fractures, usually caused by a standing level fall onto a hand in a dorsally outstretched position. The aim of the study was to analyse methods of distal radius fractures surgical fixation, as well as the correlations found in data concerning them.
Methods: The study group consisted of 41 cases of 40 adult patients, male (20%) and female (80%), treated in Department of Orthopaedics and Traumatology of the Upper Silesian Medical Centre in Katowice in 2019. Department's database has been used to provide the data required.
Results: Out of 41 fracture cases, 18 have been fixed using Kirschner wires, 18 using LCP (Locking Compression Plate) and 5 using external fixators. 72% of the A category fractures have been fixed using Kirschner wires, while 65% of C1 and C2 category fractures using LCP. 100% of C3 category fractures have been fixed externally. With the patient's age increasing, a tendency for A category fractures to occur and to use Kirschner wires has been observed. In younger patients (<50 years), C category fracture occurrence was the highest (90%) and LCP usage was preferred (80%).
Conclusions: Old age with a tendency for osteoporotic fractures predisposes to type A fractures. With older patients its preferred to use Kirschner wires. Younger patients who usually require a high-energy force for the fracture to happen are more often subjects of type C fractures. External fixation is preferred for comminuted fractures.

Keywords: distal radius fracture, Kirschner wire, Locking Compression Plate, osteoporosis, external fixation

POSTSURGICAL COMPLICATIONS AFTER TOTAL KNEE ARTHROPLASTY IN RELATION TO PREOPERATIVE ASSESSMENT OF HEALTH

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Introduction: Total knee replacement surgery is one of the most common orthopedic surgeries nowadays. As every surgery it comes with the possibility of postoperative complications. The purpose of this study was to determine the probability and types of postoperative complications basing on the patients ASA score as well as BMI, age and laboratory tests.
Methods: The Department of Orthopaedics and Traumatology of SUM database was queried from January 2019 to May 2019 to identify patients diagnosed with ICD-10 M17. 100 patients (33 male and 67 female) who required total knee arthroplasty have been qualified for the study. The average age of patients was 67.7 years. All patients were compared based on their medical history, laboratory results and postoperative consultations during hospital stay
Results: Patients were divided according to ASA score. There was 1 patient with the ASA I (1%), ASA II - 50 (50%), ASA III - 38 (38%) and ASA IV - 2 (2%); 2 patients had mixed (II/III) ASA score, 7 were disqualified. Of those qualified for surgery complications occurred in 12 patients (12%): 0 patients with ASA I, 6 patients ASA II (12%), 6 patients ASA III (1 patient with ASA II/III) (15,4%).
Conclusions: According to the queried group of patients for the purpose of this study, there is 3,4% more complications in the ASA III Score group of patients than in the ASA II. However, this is not a statistically significant correlation between these groups, regarding number and types of post-operational complications. This shows that the total knee arthroplasty procedure is a relatively safe procedure for patients, regardless of their preoperative condition.

Keywords: Arthroplasty, Knee, ASA score, Comorbidities, Postsurgical Complications

Paediatrics and Neonatology

TOTAL CARBOHYDRATES IN STOOLS AS A FACTOR OF INFECTIOUS OR NON-INFECTIOUS DIARRHEA IN TODDLERS.

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Introduction: The aim of study was to determine the frequency of elevated total carbohydrate levels in stools in young children with acute diarrhea of various etiologies.
Methods: 55 children aged 6 to 24 months with acute diarrhea were examined. According to clinical and microbiological studies, 11 people were children with acute bacterial gastroenteritis (AGE, A04) due to E.Coli, salmonella, campylobacter infections. They were considered as a 1-st group of research. Next 21 children of 2-nd group were with AGE of a rotavirus etiology (A08.0). Diarrheal syndrome of unknown etiology (A09.9) with fever and malaise were diagnosed in 12 patients of the 3-rd group. At last in 11 patients of the 4-th group the diagnosis of functional disturbances of digestion (K59.1) was established. The level of total carbohydrates in the stool of all patients was determined in the first three days after the onset of diarrheal syndrome by the semi-quantitative Benedict`s method.
Results: . An increasing of carbohydrate levels > 0.25% was found in the majority of the patients (in 44, or 80%). They were respectively 85% in the 1-st group, 90% - in the 2-nd and 91.6% in the 4-rd group. At the same time, among children of the 3rd group there were only 50% of such patients.
Conclusions: Diarrheal syndrome in toddlers most often is caused by osmotic enteric disorders and, above all, is characterized by infectious lesions of enterocytes. Diarrhea caused by functional digestive disorders is less dependent on carbohydrate accumulation, which may be important in diagnosis and treatment.

Keywords: Diarrhea, toddlers, carbohydrate in stools.

ANTIBIOTIC PRESCRIPTION IN GENERAL PAEDIATRIC PRACTICE IN THE CZECH REPUBLIC: AN INTERNET-BASED QUESTIONNAIRE STUDY

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Introduction: Increasing resistance of bacteria to antibiotics represents a serious problem that is related to antibiotic prescription. Up to 80% of all antibiotics are prescribed in outpatients and 30-50% of all antibiotics are prescribed inappropriately.
Methods: We conducted a cross-sectional knowledge, attitudes and practice survey study among general paediatric practitioners who work in the Czech Republic using an online questionnaire in 9-12/2019.
Results: The questionnaire was completed by 390/1034 physicians (37.7 %). The most important factors for antibiotic selection according to respondents were treatment efficacy (364/389; 93.6 %), safety (266/389; 68.4 %), and long-term personal experience (250/389; 64.3 %), however, the risk of ecological collateral damage was considered as important only in 141/389 (36.2 %). The major drivers of inappropriate prescription were insufficient knowledge of a patient or parents, parental pressure, and examination of a patient before weekend or holidays. The most common reasons for antibiotic prescription were urinary tract infections (314; 80.5 %), lower (292; 74.9 %) and upper (267; 68.5 %) respiratory tract infections, and Lyme disease (137/390; 35.1%). The most commonly prescribed antibiotics were penicillin (379; 97.2 %), amoxicillin (198; 50.8 %), and clarithromycin or other macrolides (174; 46.6 %). The majority of respondents considered penicillin, amoxicillin, trimethoprim/sulphamethoxazole, and amoxicillin/clavulanate as appropriate and clindamycin, azithromycin, cephalosporins, and macrolides as inappropriate in the rational empiric antibiotic prescribing.
Conclusions: This study provides essential information on the attitudes towards antibiotic prescription in paediatric primary care. Study data will be used to adjust antibiotic policy in primary care and for educational purposes.

Keywords: antibiotics, antibiotic prescription, antibiotic stewardship, general paediatricians

CAUSTIC INGESTION IN CHILDREN: A 15-YEAR RETROSPECTIVE STUDY

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Introduction: Caustic ingestion may be a serious and potentially life-threatening medical issue which requires emergency management. However, knowledge about caustic injuries in children is limited and there are some controversies about best clinical approach. We aimed to determine the incidence and clinical outcomes after ingestion of caustic agents in children.
Methods: We retrospectively reviewed 126 medical records of children admitted to the Department of Paediatrics and Gastroenterology, Medical University of Lublin due to the ingestion of caustic substance from 2004 to 2019. Information obtained for analysis included age, gender, signs and symptoms, diagnostic approach and treatment. We excluded 13 patients from analysis due to incomplete data.
Results: Study group comprised 113 patients including 73 (65%) boys and 40 (35%) girls. The age of patients ranged from 2 months to 17 years old, with the median 25 months of age and mean±SD 38±36 months of age. The majority of cases were accidental events (111; 98%). Two girls (2%) were hospitalised due to intentional ingestion of caustic agent. On admission the majority of children (62;55%) did not present any sign or symptoms of caustic substance intake. The latter 51 children (45%) presented with one or more symptoms of caustic ingestion. The most common symptoms were vomiting (22/51;43%), pain in oral cavity (21/51; 41%) and salivation (17/51; 33%). On physical examination we found signs including pharynx erythema (26/51; 51%), oral lesions (20/51; 39%) and burn of the lips (19/51; 37%). Gastroscopy was performed in 74 patients (64.5%). Oesophageal injury was stated in 25/74 patients (34%). Corrosive injury of the stomach was present in 16 (22%) patients and injury of duodenum in 1 (1%) patient. It should be highlighted that 10 children with chemical injury of gastrointestinal tract did not reveal any sign or symptoms. The treatment included proton pump inhibitors (56/113; 50%), glucocorticoids (28/113; 25%), antibiotics (26/113; 23%), analgesics 11/113; (10%), enteral nutrition (8/113; 7%). Follow-up gastroscopy was performed in 12 cases (16%). Post-chemical injury scarification of oesophageal mucosa was found in one patient.
Conclusions: The majority of children is asymptomatic after reported caustic intake. However, the absence of clinical sign or symptoms does not exclude chemical injury of gastrointestinal tract. There is a need for effective strategies to prevent caustic injuries in children.

Keywords: caustic ingestion, chemical injury, oesophageal injury, gastric injury, Zargar's classification

CASE OF 13-YEAR-OLD PATIENT WITH THYROID CANCER IN STAGE PT3AN1BMX

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Background: Thyroid cancers constitute 0.5-3% of malignant neoplasms in pediatric population. Nevertheless an increasing trend in the number of cases is reported. The most common is papillary thyroid cancer which is characterized by good prognosis.
Case Report: A 13-year-old boy was referred to an Endocrinology Outpatient Clinic due to a partially empty sella syndrome. Physical examination showed goitre stage II. However, thyroid hormone values remained within normal ranges. Ultrasound examination of the gland showed a hypoechogenic area covering the entire right lobe with a centrally located hyperechogenic area, numerous micro and macro calcifications. On the border of isthmus and the right lobe, a hypoechogenic area was noticed. Lymph nodes on the right side were enlarged. In elastography ROI 1 / ROI 2 = 10. FNAB of the thyroid gland was performed. Microscopic image confirmed suspicion of papillary carcinoma (Bethesda VI / VI). The patient was referred to the oncology reference center in Gliwice where he underwent thyroidectomy with resection of the middle neck lymph nodes. The histopathology examination confirmed papillary thyroid cancer with metastases to lymph nodes of the neck - pT3aN1bMX. Next, radioiodine I-131 was given as a complementary treatment. No active cancer was found in control scintigraphy.
Conclusions: The number of thyroid cancer cases in children is growing. Detailed diagnostic process should be proceeded among children with risk factors, in order to detect thyroid cancer and implement surgical and pharmacological treatment quickly and efficiently.

Keywords: pediatrics, endocrinology, oncology, thyroid, thyroid gland, thyroid cancer, thyroid cancer in children, papillary thyroid cancer, goitre, elastography, fine-needle aspiration biopsy, FNAB, Bethesda scale, thyroidectomy, radioiodine I-131, scintigraphy

THE DEVELOPMENT AND HEALTH OF PREMATURE INFANTS BORN BEFORE THE 30TH PREGNANCY WEEK AT THE AGE OF SIX

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Introduction: Although the majority of premature newborns in Lithuania survive, low gestational age remains the main cause of neonatal mortality, affects child's physical and mental development, can cause learning, cognitive, behavioral disorders. The aim of the study was to evaluate the health and development of premature infants, born before the 30th gestation week after six years.
Methods: The medical history of 45 infants born before the 30th gestation week at Vilnius university Santaros clinics in 2012 was analysed retrospectively. Infants were divided into 3 groups: born on the 22nd-24th or 25th-27th or 28th-30th weeks' of gestation age. Parents were contacted and requested to fill out a questionnaire about their children's development and overall health (n=35).
Results: Intraventricular haemorrhage (IVH) was diagnosed for 52% (n=18) of preterm infants (3rd degree IVH for 17% (n=6), of which 87% (n=5) had health problems at the age of 6). All premature infants with periventricular leukomalacia (n=3) have developmental disorders. Visual impairment occurred in all 3 groups, while 32% (n=11) had further developmental disorders at 6 years old. Hearing impairments were reported in two children – one was corrected with hearing aid, another one had incurable deafness. 26% (n=9) of children exhibited motor impairment, of which 6 have cerebral palsy and 3 mixed specific developmental disorders. Attention and concentration disorders and lack of self-esteem are observed in all 3 groups.
Conclusions: Infant gestation age is inversely proportional to the severity of child's developmental disorders, emotional and social well-being at 6 years old.

Keywords: premature infant, child development, developmental disorders

PROGNOSTIC FACTORS IN CONGENITAL DIAPHRAGMATIC HERNIA IN NEONATES. CLINICAL CASE SERIES AND LITERATURE REVIEW.

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Background: Congenital diaphragmatic hernia is one of the most serious congenital disorders, associated with a high mortality and morbidity. Despite improvements in perinatal diagnosis and treatment, mortality rates from congenital diaphragmatic hernia remain high at 30–70% for 1 year outcomes. Analyzing prognostic factors, improving treatment strategies are the most important steps in higher survival rates for newborns with CDH. Aim of the study: To analyze clinical cases of neonates born with CDH. To perform a detailed analysis of the literature, find out what are the factors in the prognosis of CDH.
Case Report: Clinical cases of four neonates born with CDH were collected, analyzed and compared. Results: The condition of all neonates after birth was very severe. All neonates had a left-sided hernia, all underwent CDH repair. 3 out of 4 neonates died despite maximal medication and surgery. 3 neonates, who did not survive, were in severe condition from birth due to respiratory failure, heart failure, especially severe pulmonary hypertension, their postoperative course was complicated. The neonate, who did survive, did not have pulmonary hypertension.
Conclusions: Factors in the prognosis of neonatal CDH: diaphragmatic hernia size, localization, time of diagnosis, ultrasound fetal lung-head ratio, liver protrusion through diaphragmatic defect, neonatal birth weight, 5 min. APGAR score, progressive pulmonary hypertension, postoperative course of diaphragmatic plastic, application of ECMO.

Keywords: Congenital diaphragmatic hernia (CDH), prognostic factors, pulmonary hypertension, Extracorporeal membrane oxygenation (ECMO).

ANALYSIS OF TREATMENT METHODS AND OUTCOMES FOR PERIANAL ABSCESS (PA) AND FISTULA IN ANO (FIA) IN INFANTS

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Introduction: Perianal abscess (PA) is a relatively common condition in children and occurs in 0.5 to 4.3% of the infant population. In the majority of cases, it is associated with fistula in ano (FIA). Surgical treatment of FIA includes fistulectomy, fistulotomy or, rarely, cryptotomy. The aim of the study is to perform a retrospective analysis of treatment methods and outcomes for PA and FIA in infants at the Department of Paediatric Surgery and Urology of the Regional Specialised Children's Hospital in Olsztyn, Poland, in 2014-2019.
Methods: From January 2014 to December 2019, 44 infants with diagnosed PA and FIA were treated. The majority of patients were boys: 41 (93%) and only 3 (7%) were girls. For PA, three different treatment methods were used: incision and drainage, fistulotomy or fistulectomy.
Results: Out of 44 treated infants with diagnosed PA and FIA, 29 were treated only by incision and drainage. Among them, 19 were cured. FIA was identified in 9 patients and fistulectomy or fistulotomy was performed. In this group, there was 1 recurrence, which was retreated with fistulectomy and cured. In 6 patients, PA drained spontaneously; in 3 of them there was recurrence and FIA was diagnosed during another hospital stay. There were 7 fistulotomies and 14 fistulectomies performed and their efficacy was 100 vs 93%, respectively.
Conclusions: Fistulotomy is the most effective and safest method of FIA treatment in infants. In every case of perianal abscess diagnosis, a fistula in ano should be looked for.

Keywords: perianal fistula, perianal abscess, fistulotomy, fistulectomy

CLINICAL CHARACTERISTIC AND OUTCOMES OF BATTERY INGESTION IN CHILDREN

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Introduction: Foreign body ingestion is a common problem in children particularly the youngest ones who explore the environment through their senses. The commonly available in households batteries may be an important source of casualty. The aim is to evaluate frequency and clinical outcomes of battery ingestion in children.
Methods: Retrospective analysis of 347 medical records of children admitted to the Department of Paediatrics and Gastroenterology, Medical University of Lublin due to ingestion of foreign body from 01.01.2014 to 30.09.2020 was performed. Data on patients' demographics, symptoms and endoscopy findings were collected.
Results: In the study period there were 94 patients hospitalized due to battery ingestion including 51 (54%) boys and 43 (46%) girls. Patients' age ranged from 6 months to 17 years old (mean 3.27±2.56 years; median 2.5 years). Two children had autism. Most of children ingested single (82; 87%) and button (87; 93%) battery. Time from ingestion to hospital admission ranged from 0.5-96 hours (mean:6±12h; median 3h). The majority of children (92; 98%) were in a good condition and did not present any symptoms (73; 78%). Gastroscopy was performed in 69 (73%) children, out of which corrosive injury of oesophagus was stated in 7 (10%) and of stomach in 26 (38%).
Conclusions: Battery ingestion accounted for about a third cases of all admissions due to foreign body ingestion. Good general condition of a child immediately after accident may cause a false sense of security in parents and delay in reaching hospital. However, ingestion of batteries constitutes a significant health hazard.

Keywords: foreign body ingestion, button battery, injury, complication, endoscopy

CLINICAL CHARACTERISTICS IN BRONCHIOLITIS WITH RSV IN INFANTS

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Introduction: Bronchiolitis is among the most common illnesses in infants and RSV is its most common etiological agent. It is known that RSV infection in infants is associated with an increased rate of morbidity and mortality.
Methods: We performed a retrospective analysis of infants hospitalized with bronchiolitis with RSV in the National Institute for Mother and Child Health "Alessandrescu-Rusescu", Bucharest, Romania, between January-December 2019. The identification of RSV was done using rapid antigen detection tests (RADT). Clinical data was collected from patient records.
Results: Out of a total of 256 cases of bronchiolitis in infants, in 138 cases (53.9%) RADT was positive for RSV. There was a slight predominance of males (54.3%). The median age at presentation was 2.5 months (IQR:1, 4.5). Clinical symptoms were dominated by cough (98.5%), rhinorrhea/nasal obstruction (91.1%), and difficulty breathing (87.4%). Fever was not characteristic, being present in 41.2% of infants with RSV positive. A percentage of 17.4% (n=24) also presented digestive manifestations such as diarrhea or vomiting. The median length of hospital stay was 7 days (IQR: 4, 9). A total of 18 infants needed hospitalization in the ICU. No deaths were reported.
Conclusions: We identified an increased rate of RSV infection in infants with bronchiolitis. Coughing and difficulty breathing are the main symptoms that have characterized infants with RSV bronchiolitis. Close monitoring of RSV infections is important to limit the impact it has on children, especially infants. The development of specific prophylaxis measures is very necessary.

Keywords: Clinical, bronchiolitis, RSV, infants.

SMITH-LEMLI-OPITZ SYNDROME- CASE REPORT

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Background: Smith-Lemli-Opitz Syndrome (SLOS) is autosomal recessive genetically determined disease. The cause of the SLO syndrome is a mutation in the gene encoding 7-dehydrocholesterol reductase. Mutation leads to the inhibition of the pathway of endogenous cholesterol synthesis, or a significant reduction in the formation of the end product, which is cholesterol necessary for the proper development of the brain. The aim of the study is to present a case of a newborn with Smith-Lemli-Opitz Syndrome.
Case Report: A 4-week-old newborn, born caesarean section, good general condition. Family history: brother of the boy with diagnosed SLOS, parents are asymptomatic SLOS carriers. During pregnancy, the mother had a non-invasive urine test for cholesterol metabolites. The test result showed an increased level of 7- and 8-dehydrocholesterol. The mother did not consent to invasive prenatal testing. The child presented dysmorphic features. Physical examination revealed a biconvrically flattened skull, a retracted mandible with a bird profile, asymmetry of the eyelid gaps, partial syndactyly of the 2nd and 3rd toes, a high protruding palate and reduced muscle tension. In imaging studies: the head USG revealed asymmetry of the lateral ventricles, USG of the abdominal cavity, ECHO without deviations. Laboratory tests showed decreased values of total cholesterol. Hormonal tests within the normal range. Based on the history, physical examination, clinical observation and additional tests, SLOS were diagnosed, which was confirmed by a genetic test.
Conclusions: The diagnosis of SLO syndrome is based mainly on biochemical and molecular tests. Unfortunately, there is no possibility of causal treatment, only symptomatic treatment is possible. Cholesterol supplementation may bring clinical improvement, but research in this direction has not yet been conducted.

Keywords: SLOS, cholesterol, genetic disease

TASKS OF A NURSE IN THE CARE OF CHILDREN WITH RHEUMATIC DISEASES.

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Introduction: Rheumatic diseases affect not only the elderly people, but also children. These are non-traumatic chronic diseases of the locomotor system, which are manifested by pain, swelling and movement limitations. They may cause disability. Objective of the work: Getting to know the scope of the nurse's tasks in the care of children with rheumatic diseases.
Methods: The method used in the work was a diagnostic survey, and the research tool was the author's questionnaire consisting of 37 questions. The group of respondents consisted of 114 parents of children aged 2-17 years with diagnosed rheumatic disease. The study was conducted at the Pediatric Lung Diseases and Rheumatology Department of the University Children's Hospital in Lublin.
Results: The majority of parents (84%) believe that they can recognize characteristic symptoms of rheumatic. Parents' opinions about the most common symptoms in a child are different – 27% of people report pain, 22% swelling, 20% difficulty in moving and 11% indicate fever. About 85% of parents cooperate with nursing staff and take advantage of the educational assistance offered to them. About 22% of respondents obtain information a child's disease from the media, 16% from books and 12% of people cite other sources.
Conclusions: An important task of the nursing staff is to educate parents about rheumatic diseases in children from the very beginning of the diagnosis. The proper action is to talk to parents about the symptoms and problems that arise in caring for a sick child. The nurse should primarily support both the parents and the child.

Keywords: rheumatic diseases, nurse, children

EVALUATION OF MICROBIOTA IN CHILDREN WITH ACUTE APPENDICITIS

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Introduction: Acute apendicitis is one of the most common paediatric abdominal pathologies. 27% patients each year require surgery, despite efficacy of antibacterial treatment.
Methods: Aim of this study was to evaluate microbiota in paediatric patients with Acute complicated Appendicitis (AcA) and Acute uncomplicated Appendicitis (AnA), as well as determine antibacterial susceptibility. Total 67 patients aged from 7 to 17 were eligible and recruited for this study, all of them had appendectomy. During operation a microbiological culture samples were taken from peritoneal cavity, distal and proximal parts of appendix. Selected antibiotics were placed on the inoculated plates, incubated at 36°C for 18 hours. Results were evaluated by measuring the zone of inhibition and resistance was evaluated using EUCAST.
Results: Patients were devided into two groups. First group included 34 patients (50.7%) with positive culture from the peritoneal cavity (AcA). Second group included 33 patients (49.3%) with negative culture from the peritoneal cavity (AnA). E.coli was the prevalent representative of appendiceal intraluminal microbiota in both groups, which summed up 51 patients (76%). P.aeruginosa was the most common in extraluminal appendiceal microbiota. Microbiota in distal and proximal parts was identical in 22 AcA cases (64.7%). In samples of submucosa in both groups E.Coli was the most common, P.Aeruginosa was the second.
Conclusions: In cases of AcA P.Aeruginosa is the most common microorganism and E.Coli is the most common in AnA. In cases of AcA antibiotic treatment should include antibiotics with different mechanisms of action to achieve better effect and prevent the development of antibiotic resistance.

Keywords: microbiology, appendicitis, pediatry, antibiotics, surgery,

Patomorphology and Forensic Medicine

THE IMPACT OF CHRONIC DIETARY EXPOSURE TO CADMIUM ON THE CONCENTRATION OF MALONDIALDEHYDE IN THE BRAIN TISSUE OF A RAT

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Introduction: Cadmium is one of the main environmental contaminants in industrialized countries. This heavy metal-induced lipid peroxidation plays a pivotal role in the development of the injury of various organs, especially those abundant in lipids. Thus, the brain tissue is particularly susceptible to lipid peroxidation. Aim of the study: The present study aimed to examine the influence of low and moderate repeated cadmium intake on the concentration of malondialdehyde (MDA) as a marker of lipid peroxidation in the brain of a rat.
Methods: Young female Wistar rats (n = 96) were divided into 3 experimental groups, two of which were treated with cadmium via diet at the concentration of 1 and 5 mg/kg. Eight rats from each group were sacrificed after 3, 10, 17, and 24 months. The concentration of MDA in homogenates of the brain tissue was determined spectrophotometrically (at 532 nm).
Results: The low-level (1 mg Cd/kg diet) and moderate (5 mg Cd/kg diet) exposure to cadmium for 3 months had no impact on the concentration of MDA in the brain. The concentration of this marker of lipid peroxidation after 10 - 24 months of the treatment with the 1 and 5 mg Cd/kg diet was increased by 40 - 90% and 63 - 100%, respectively, compared to the control group. There was no difference in MDA concentration dependent on the level of exposure to cadmium.
Conclusions: The results allow concluding that even low-level chronic exposure to cadmium via diet may enhance lipid peroxidation in the brain and in this way contribute to its damage.

Keywords: Cadmium, brain, lipid peroxidation, malondialdehyde.

LIPOMATOUS HYPERTROPHY OF CARDIAC INTERATRIAL SEPTUM - CASE REPORT

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Background: Lipomatous hypertrophy of cardiac interatrial septum is a rare (0,6% of all heart tumors) benign lesion of the heart usually diagnosed for 60 year old and above patients. Most common symptoms include atrial fibrillation, supraventricular tachycardia and sudden cardiac death. It usually is described as a non-encapsulated mass arising from the atrial septum.
Case Report: 60 year old male was found unconscious in his car by the paramedics. He was declared dead with a preliminary diagnosis of unspecified sudden cardiac arrest. Patient also had a previous cardiological history; two years ago he was diagnosed with a permanent atrial fibrillation and augmentation during transthorasic echocardiography. An autopsy was performed to determine the cause of death. The main autopsy finding was the lipomatous hypertrophy of cardiac interatrial septum: a soft, smooth mass 12cm in length, up to 8cm in width, and weighing 90g. The inside of the mass is firm, non-elastic, yellowish color with a few vessels. Histological examination showed proliferation of adipose and connective tissue perivascularly and in between cardiomyocytes with some hypertrophic cardiomyocytes. No atypical adipose cells were seen. The lipomatous hypertrophy could have damaged the structure of interatrial septum where the atrioventricular node is located and that could have caused arrhythmia which ended in sudden cardiac death.
Conclusions: Lipomatous hypertrophy of interatrial septum is a rare heart disorder that could be the cause of dangerous heart conditions. In the presented case, the lipomatous hypertrophy damaged the structure of interatrial septum, which caused atrial fibrillation and sudden cardiac death.

Keywords: lipomatous hypertrophy, atrial fibrillation, sudden cardiac death, heart tumors.

MORPHOLOGICAL CHANGES OF KIDNEYS IN CASE OF EXPERIMENTAL HYPERTHYROIDISM

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Introduction: Pluripotent influence of thyroid hormones determines the close connection between their level and the intensity of the dysfunction of the inner organs, including kidneys. The fact of mutual influence of thyroid status of the body and renal function status is undisputed and stipulates the importance of the investigation of morphological changes in the renal tissue in case of thyropathy. The aim of this study was to establish the character of morphological changes in the renal tissue under the influence of thyroid hormone excess.
Methods: For the experimental modeling of hyperthyroidism 18 matured nonlinear male rats were administered L-thyroxine intraperitoneally in the dose of 200 µg/kg. 14 days after pathology induction hyperthyroid rats and 10 animals of the control group were withdrawn from the experiment. The object of the research was renal tissue, removed, washed out of blood and stained by Slinchenko's method.
Results: Histological examination of the kidneys of hyperthyroid animals revealed a heterogeneous lesion of the glomerular basement membrane structure of about 10% of the glomeruli, which was characterized by a decrease in the water-blue reaction when stained by Slinchenko's method. The overall structure of the glomeruli looked paler than the normal morphological pattern. Disseminated-focal fibrin deposits in the form of red-colored «filaments» were observed in the lumen of some peritubular capillaries and the lumen of the tortuous tubules.
Conclusions: The findings mentioned above evidence of a moderate disturbance of the structures of the glomerular filter in the kidneys of hyperthyroid rats and incomplete fibrinogenesis with disseminated-focal distribution of unpolarized fibrin.

Keywords: experimental hyperthyroidism, kidneys

PSYCHOACTIVE SUBSTANCE ABUSE: SPECTRUM OF ABUSED DRUGS AND OVERDOSE TRENDS

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Introduction: The object of the study was to determine which psychoactive substances were the most frequently found in the body fluids of the deceased in Vilnius county as well as the characteristics of the deceased themselves such as age and sex.
Methods: A retrospective data analysis of the State Forensic Medicine Service autopsy records was performed. 239 depersonalised records from the years spanning from 2013 to 2020 were identified and analysed with the R commander software.
Results: From the 239 deceased persons identified in the analysis 84% (200) were males, while 16% (39) were women. The average age of the deceased was 39.98(±10.33). Toxicological reports reveal that during the study period of 2013-2020 the most frequently encountered drugs were opiates and opioids. Among them, the most commonly encountered were morphine (105 cases, but morphine is a metabolite of heroin and codeine), methadone (39 cases), codeine (34 cases), heroin (31 cases), while fentanyl derivatives were involved in 21 cases. Opioids users were also frequently found to have satellite substances in their blood. Of these diphenhydramine was discovered in 59 cases cases, while clonazepam was found in 26 cases. Over half of the cases (54% or 129) involved concomitant alcohol intoxication. The average blood concentration of ethanol was 1.68 ±0.89 g/l, while the average concentration in urine was 2.16 ±1.1 g/L. Manner of death was something other than overdose in 41% (91 cases), while the remaining 59% (148 cases) were overdose deaths. In a total of 6 cases the substance responsible for the fatal intoxication was not succesfully identified.
Conclusions: The majority of deceased were middle-aged males. The most frequently found drugs were opiates, though a growing trend towards more opioid related deaths is observed. Concomitant alcohol intoxication was involved in more than half of the cases.

Keywords: drug abuse, psychoactive substances, overdose, alcohol intoxication, drug intoxication.

CAUSES, RISK FACTORS AND BLOOD VOLUMES OF CARDIAC TAMPONADE

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Introduction: Cardiac tamponade is one of the causes of sudden death. It is caused by an abnormal increase in fluid accumulation in the pericardium, which, by raising intracardiac pressures, impedes normal cardiac filling and often leads to cardiac arrest and death.The aim of the study was to determine the causes, risk factors, effused blood volumes that caused death from cardiac tamponade.
Methods: Reviewed analysis of autopsy data of the State Forensic Medicine Service in Vilnius between the year 2013-2019. 100 autopsy cases with cardiac tamponade were enrolled in a retrospective study. Data were statistically processed.
Results: 100 autopsy cases of non-traumatic cardiac tamponade were enrolled. There were 51% men aged 64.21±12.33 years and 41% women aged 77.22±9.61 years old. Overall average age 69.59±12.95 years. Determined two main causes of heart tamponade. Heart rupture due to myocardial infarction was responsible for the most causes (67%). Mostly (27%) found in the posterior wall of the left ventricle. Effused blood amount constituted 522.24±213.27g. Rupture of the aortic dissection was the second cause and made 33% of the study, most often (29%) found in the ascending aorta. Estimated blood amount was 626.82±268.49g. Overall effused blood amount in pericardium was 547.13±232.38g. Ranging between 200g and 1390g, median 500g.
Conclusions: Rupture of posterior wall of the left ventricle in myocardial infarction and rupture of the ascending aortic dissection were the causes of cardiac tamponade. Blood amount ranging from 200g to 1390g, median 500g. Mostly common in men over 64 years old.

Keywords: cardiac tamponade, myocardial infarction, aortic dissection, autopsy

THE IMPACT OF DIAGNOSIS AND FEARS OF PATIENTS WITH SUSPECTED KLINEFELTER SYNDROME.

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Background: Azoospermia, eunuchoidism or gynecomastia are some of the symptoms of the disease that were described in year 1942 by Harry Fitch Klinefelter. Klinefelter syndrome is the most common sex chromosome disorder where affected males carry an additional X chromosome. The additional X chromosome carried by the patients result in hypogonadism, androgen deficiency and impaired spermatogenesis. However sometimes diagnosis cannot be made before or during puberty. The first diagnostic differentiation becomes apparent upon adulthood. This is due to the fact that younger patients retain normal function of gonadal and pituitary glanduntil puberty. Characteristic picture for adult patients are elevated FSH and LH levels and a plateau of testosterone levels to the lower half of the normal range or below.
Case Report: This study analyzes the case of a 45-year-old patient with suspected Klinefelter Syndrome, who was falsely diagnosed with elevated FSH levels and significantly reduced levels of testosterone. Until now, he has been treated endocrinologically for hypothyroidism. The patient manifests the appearance characteristic of the disease unit we describe, i.e. rare facial and body hair, gynecomastia, reduced muscle mass with female fat distribution, rounded hips and reduced testicle size. Despite the fact that clinical symptoms indicate the described syndrome, the patient is reluctant to consider genetic testing. This is influenced by the fear that awareness of the disease will lower his sense of masculinity while confirming infertility. The patient believes that a positive result of the test will leave negative societal impact in his life and will further worsen his self-esteem and quality of life.
Conclusions: The case we described illustrates how this disease can lead to doctors not only facing diagnostic challenges but also ethical issues. It is important for the doctor to maintain a neutral attitude, to realize how impactful may a diagnosisas such be, to discuss its consequences and therapeutic options, while not exerting pressure on the patient and giving him the opportunity to make his own informed decision.

Keywords: Klinefelter syndrome, diagnosis, fear, disease

FATAL EXPLOSION INJURIES - RETROSPECTIVE ANALYSIS OF ARCHIVES OF THE DEPARTMENT OF FORENSIC MEDICINE IN CRACOW FROM YEARS 2009-2019

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Introduction: Explosion injuries are various. They may manifest as blunt trauma, burns, as well as penetrating injuries and body fragmentation. Thorough analysis of forensic cases can be useful in identifying such injuries. The aim of this scientific work was to evaluate injury profiles, causes and nature of mortal explosion incidents.
Methods: We investigated 37 cases of mortal explosion injuries in the archives of the Department of Forensic Medicine in Cracow in years 2009-2019.
Results: Over the 10-year period, 37 individuals with fatal explosion injuries were examined in the Department of Forensic Medicine in Cracow. Thirty-one of them were male and 6 were female. Only one army officer died on duty, the rest of the victims were civilians. Thirty-one cases were determined as an accident, 2 cases as suicide and 1 case as homicide. In 3 cases the circumstances were not specified. The etiology of the explosion was identified as gas (59,5%), explosives (16,2%), various types of stoves (8,1%), gasoline (8,1%), a radiator (2,7%), a pressured tire (2,7%) and an unclear explosion (2,7%). In all cases of gas explosions, burns of significant body surface were the main injuries. In the group of explosive blasts the main fatal injury was complete disruption in 2 cases. In the remaining 4 cases blood in the body cavities (75%), foreign bodies in tissue (75%) fractures of the cranium (75%) and ribs (50%), and raptures, lacerations and contusions of the internal organs (50%) and one traumatic amputation were present.
Conclusions: According to our study, gas explosion was the most common cause of fatal explosion injuries. The results of our study suggest that fatal explosion injuries vary depending on the type of explosion. Burns of significant body surface are caused by gas explosions. Haemorrhage to body cavities, craniocerebral injuries, foreign bodies in tissues, fractures, fragmentation, body mutilation and traumatic amputation are often described after explosive blasts. The injury pattern has not been found in the remaining cases.

Keywords: explosion injury, gas explosion, explosives, forensic medicine, blast

PARACETAMOL-INDUCED LIVER NECROSIS AS AN UNDERESTIMATED CAUSE OF DEATH

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Introduction: Deaths caused by liver necrosis are rare, because there are only a few substances causing the condition. Paracetamol, which is commonly used drug, can lead to liver necrosis after overdose. Moreover, this complication may develope when liver damage features appear or due to alcohol abuse at a dose three times lower. Recently, there have been an increasing number of deaths from hepatic necrosis, associated with paracetamol poisoning in combination with alcohol.
Methods: In our research we have considered 2583 cases from years 2016-2019 in which diffuse hepatic necrosis occured, with central necrosis predominating. We have rejected cases with stated cause of death other than liver necrosis, multiple organ failure cases or accident victims. We have considered cases of death with no other postmortem findings than liver necrosis, which could lead to a death.
Results: 7 cases with ambiguous cause of death and with hepatic necrosis were found. Half of them were connected with alcohol or paracetamol intake. In most of examined cases patients were alcoholics or homeless. All of the cases were men, with medium age 49 y.o., and apart of liver necrosis they had hepatic steatosis.
Conclusions: Hepatic necrosis should be considered as a possible cause of death, even though it is rare. Long time gap between toxin intake to death make it difficult to prove poisoning as a cause of death in lab tests. Although, lab test should be suggested during prosecution investigation in order to exclude liver necrosis as an insulate cause of death.

Keywords: hepatic necrosis, paracetamol, forensic toxicology

WARTHIN'S TUMOR – CASE REPORT AND SHORT REVIEW.

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Background: Salivary gland tumors are rare (average incidence 5 per 100 000 per year) and can be malignant or benign. Benign tumors occur more often with 80% of them localised in parotid gland. Warthin's tumor (WT) also known as a papillary cystadenoma lymphomatosum is a second most common benign parotid tumor after pleomorphic adenoma and represents about 10% of cases localised in this gland. This tumor affects individuals at mean age of 60 years and occurs twice more commonly in men. The incidence of cystadenoma lymphomatosum among smokers is significantly higher than in non-smokers. They usually appear in the tail of parotid gland and may be bilateral or multifocal in up to about 10%. Patients typically notice painless parotid swelling. Malignant transformation is extremely rare.
Case Report: I present a case of elderly man age 64 admitted to otolaryngology ward with painless swelling of the right parotid gland with enlarged regional lymph nodes present. Resection of the gland was performed without complications. The pathology report identified a benign tumor – papillary cystadenoma lymphomatosum (Warthin's tumor) with the small foci of tumor tissue inclusions in the lymph nodes.
Conclusions: Presence of Warthin's tumor foci within lymph nodes should not be treated as metastases as they represent so called "inclusions". The swift and proper differentiation is essential as it can be successfully treated surgically, and the recurrence rate is very low (less than 2%). In this case it was of utmost importance because patient could've undergone the unnecessary oncological treatment.

Keywords: Warthin's tumor, papillary cystadenoma lymphomatosum, salivary gland tumor,

THE ROLE OF TOXICOLOGY IN DOCUMENTATION DRUG FACILITATED SEXUAL ASSAULT (DFSA).

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Introduction: Dangerous situations during evening outgoing arise when a stranger offers an drink containing a drug what is equivalent to committing a crime. Sometimes, in addition to alcohol, a drug combination dissolved in a drink was used to intoxicate the person. That may be classified as a drug facilitated sexual assault. The aim of the work is to present the rule of toxicological determinations as a useful methods for proving use of psychoactive substances during the DFSA and possible problems occurring during the analysis of the secured material.
Methods: The research was based on literature review and published scientific articles obtained from the Google Scholar scientific browser, PubMed US National Library of Medicine.
Results: The studies carried out so far have proven well over 50 substances that can be used in DFSA. The most frequently used substances were alcohol, cannabinoids and benzodiazepines. The appropriate delivery time for samples such as blood, urine and hair is essential for a reliable toxicological analysis.
Conclusions: Toxicological analysis can provide important evidences during the criminal proceedings such as whether a drug was used to commit a crime which had an impact on the victim's or offender's sanity. An limitation for the conducted research is the low activity of the substance in low concentrations. Often, the time of reporting an attack is too late and doesn't fit within the timeframe of possible detection. Many readily available drugs have been included in the DFSA list and makes it difficult to analyze and separate true intoxication from deliberate use.

Keywords: sexual crimes, DFSA

INVESTIGATING THE EXPRESSION OF CARBONIC ANHYDRASE IX IN FOLLICULAR LYMPHOMA

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Introduction: Follicular lymphoma (FL) is an indolent B-cell lymphoma. the germinal centers in the nodes showed to be hypoxic according to the latest studies. Hypoxia inducible transcription factor-1-? (HIF1?) is a key regulator under hypoxic conditions, it activates several survival pathways, such as the expression of Carbonic anhydrase IX (CAIX) which was reported in several malignancies (e.g. classical Hodgkin lymphoma) but not in FL yet. We aimed to investigate the expression of CAIX in different grades of FL.
Methods: 20 FL FFPE samples (n=5/grade) and a control group of reactive lymph node FFPE samples (n=5) were selected. CAIX specific antibody was used to perform immunohistochemical analyses. The slides were first examined with light microscope then digitalized with Panoramic Slide Scanner MIDI (3D HISTECH, Budapest, HU). As a next step, photos were taken about the germinal centers (n=15/case), and CAIX positive pixels were detected with ImmunHistoChemistry plugin of ImageJ software.
Results: The expression of CAIX was intensive in the control and in the low-grade FL group (grade 1, grade 2) in comparison with the high-grade group (grade 3, grade 4) by light microscope. The results were supported by the image analysis also. Interestingly, the expression of CAIX decreased steadily in the different FL grades and was absent in grade 3b.
Conclusions: Factor CAIX was detected for the first time in FL to the best of our knowledge. The expression was high in the low-grade FL group compared to the high-grade cases. Thus, the connection between hypoxia and the malignant transformation in FL needs further investigation.

Keywords: follicular lymphoma, hypoxia, carbonic anhydrase IX The study was partly supported by EFOP-3.6.3-VEKOP-16-2017-00009; EFOP – 3.6.1. – 16-2016-00022 „Debrecen Venture Catapult Program” and ÚNKP-20-3-II-DE-488.

CHANGES IN THE FREQUENCY OF HOSPITAL DEATHS CAUSED BY PULMONARY EMBOLISM DURING LAST 20 YEARS

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Introduction: Pulmonary embolism is a severe complication of hospitalization which often leads to patient's demise. During the last 20 years new prevention methods had been developed and applied in hospitals, which supposedly should have resulted in a decrease of embolic events among hospitalized patients.
Methods: Around 200 autopsies from each period (2016-17, 2006 and 1996-1997) have been selected from data stored in the Department of Forensic Medicine UJ CM. Selected autopsies concerned only hospitalized patients. Descriptions of the autopsies have been investigated in search for an embolic material in the pulmonary arteries.
Results: The study has shown no significant change in the percentage of hospital deaths caused by a pulmonary embolism. The percentage was 1,55% (n=3) in the years 1996-97, 0,95% (n=2) in the year 2006 and 0,96% (n=2) in the years 2016-17. However, the number of hospital deaths due to pulmonary embolism in respect of time has decreased - the average occurrence was 0.2308 deaths per month (n=3) in the years 1996-97, 0.1667 deaths per month (n=2) in the year 2006 and 0.0833 deaths per month (n=2) in the years 2016-17.
Conclusions: The number of cases which have been found is small, so the conclusions should be treated carefully. The results have shown that deaths caused by a pulmonary embolism occur more rarely than 10 years ago and even more rarely than 20 years ago. This change could have been caused by improvements of the prevention methods.

Keywords: embolism, hospitalization, complication, autopsy

CARFENTANIL RELATED DEATHS IN VILNIUS REGION 2014-2019: AN OVERVIEW ON A GROWING PROBLEM

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Introduction: Carfentanil is a synthetic opioid analog of fentanyl. There is insufficient research regarding this drug‘s effect on humans as it‘s approved only for use in veterinary medicine. However illicit use of carfentanil for recreational purposes is increasing every year. More attention should be brought to this substance as it is very potent and poses serious personal and public health risks.
Methods: A retrospective study was performed using postmortem investigation data (full autopsies and toxicological analyses) obtained from Lithuanian State Forensic Medicine Service database. From 239 analysed cases of drug overdose in years from 2014 to 2019, 20 patients had carfentanyl in their system. Those 20 cases were selected for further analysis. Data was processed using R Commander.
Results: All 20 analyzed deceased were adults aged from 24 to 67 years old, 12 of them male and 8 female. The mean age of decedents was 36,6. In 2014 only 1 case of carfentanil use was encountered however the number of cases increased each year until it peaked in 2018 (8 cases). Exact concentration of the substance was possible to evaluate in 6 decedents and it was 3.83 ng/ml on average but in other cases only traces of carfentanil were detected. In all cases some other psychoactive substance or a combination of them were also found (diphenhydramine – in 17, morphine – in 6, metadon – in 4 cases). In 10 cases alcohol was found in blood and urine (average concentration in blood - 1.12 ‰)
Conclusions: A growing number of carfentanil use cases during 2014-2019 period was observed. Carfentanil was found to be used in combination with other psychoactive substances, namely diphenhydramine, alcohol, morphine and metadon. Further research of how carfentanil affects human body is needed.

Keywords: carfentanil, drugs, opioids, overdose, autopsy

MULTIPLE PRIMARY MALIGNANCIES: A CASE STUDY EXPOSING THE GENETIC RISKS POSED BY SIGNIFICANT NEOPLASIA FAMILY HISTORY

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Background: Colon adenocarcinoma represents the second leading cause of cancer death after lung malignancies. Individuals with family history of malignant neoplasm often present with multiple primary cancers. Thus, the potential for cancer to occur independently a second time, or more often, in the same patient remains an ever-present risk.
Case Report: We relate the case of a 26-year-old male patient with family history of neoplasms (3 close relatives) was admitted into Medical Oncology Clinic of Regional Oncology Institute Iasi, Romania for anaemic syndrome and significant weight loss. Computerised Tomography revealed a vegetative solid mass, located in the cecum and last ileal loop, with irregular margins and infiltrative aspect in the fatty tissue surrounding the lesion. The medical team opted for right hemicolectomy and performed a biopsy which showed a moderately-differentiated adenocarcinoma with infiltration of the ileocecal valve, with ulcerated and mucinous areas, identified as KRAS wild type colon cancer, stage 3. Afterwards, the patient received adjuvant chemotherapy with FOLFOX in 12 rounds. Three years later, the patient is diagnosed with rectal ampullary cancer (moderately-differentiated adenocarcinoma), hepatic metastases and ureterohidronephrosis. Post terminal colectomy the patient benefited of multiple chemotherapy rounds with CETUXIMAB and developed numerous complications. The patient survived in the metastatic stage approximatively 1 year, which shows the aggressivity of the neoplasm in spite of the treatment.
Conclusions: The particularity of this case resides in the presence of two primary malignancies, promoted by an inherited genetic cancer susceptibility, which also explains the unfavourable outcome defined by resistance to chemotherapy, multiple infections and ultimately exitus.

Keywords: KRAS wild type colon cancer, chemotherapy, metastasis, multiple primary malignancies,

ZOMBIES OF THE 21ST CENTURY

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Introduction: ?-Pyrrolidinopentiophenon (also known: ? -PVP, Flakka, Zombie) is a derivative of cathinone. This drug is a dopamine, norepinephrine and catecholamine reuptake inhibitors, which can cause addiction and side effects.
Methods: The research of articles from NCBI. Analysis cases from archives of Forensic Toxicology Laboratory of KiZMS UM Lublin from 02.01.2012. until 16.10.2020r
Results: In 2016, the stimulating effect of ?-PVP was confirmed. A year later, scientists administered rats ? -PVP and MDPV. Due to the structural similarity of this compounds it can be assumed that PVP would induce paranodial psychosis. The reported case of psychonaut drew attention of PVP-induced psychosis. No poisoning cases of PVP were recorded in the archive of KiZMS, but its derivative 4 - Chloro - ? – PVP. In first case detected: 4 - Chloro - ? – PVP (14 ng/g) and ethyl alcohol (4.2‰). In second case detected: 4 - Chloro - ? - PVP: 1.2 ng/ml; 4 - CMC: 215.7 ng/ml.; 3 - CEC: 113.9 ng/ml. In last case detected: tramadol (0.2ng / ml), paracetamol (4.6 ng / ml), its metabolites and 4 - Chloro - ? - PVP (2.8 ng / ml).
Conclusions: Analysis of cases from archives proved that PVP was not popular in province of Lubelskie. Knowledge of the pharmacology and pharmacokinetics as well as the long-term effects of abuse is insufficient. This makes it necessary to expand the database of case reports that will allow to systematize the information on the dangers of using ? – PVP. No lethal or toxic dose has been determined yet.

Keywords: PVP, Flakka, synthetic cathinones, zombie drug, ?-Pyrrolidinopentiophenone

Pharmacology, Genetics and Dietetics

LUNG ADENOCARCINOMA WITH TWO CO-EXISTING UNCOMMON EGFR MUTATIONS – CASE REPORT WITH CLINICAL IMPLICATIONS

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Background: Lung adenocarcinoma is one of the non-small cell lung cancer (NSCLC) subtypes harbouring EGFR mutations the most often. However, this is a heterogenous group. While there is a robust data on patients with the most common mutations, there is not enough information on rare EGFR variants due to uncommon mutations often being excluded from clinical trials. Amongst them, the most frequently observed groups are exon 20 insertions, G719X, L861Q and S768I.
Case Report: We present a case of 32 year old patient with non-mucinous lung adenocarcinoma with two co-existing uncommon EGFR mutations - G719X and S768I. Tumor genotype suggest sensitivity to EGFR tyrosine kinase inhibitors (TKI). Patient is treated with afatinib, 2nd generation TKI, that is approved by FDA and considered to be beneficial in this group of patients. Standard doses were applied and 3 months after the disease is stable (SD).
Conclusions: Lung cancer has become an enormous problem of modern medicine, and even rare EGFR mutations became a common clinical phenomenon. Patients with these mutations should be reported and furtherly enrolled in dedicated clinical trials to optimize therapeutic approach and treatment.

Keywords: non-small cell lung cancer (NSCLC), EGFR mutations; tyrosine kinase inhibitor (TKI), molecular targeted therapy

MORPHOFUNCTIONAL STATE OF THE PROXIMAL EPIPHYSEAL CARTILAGE OF THE HUMERUS AFTER TIBIA FRACTURE AND ORAL CALCIUM INTAKE

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Introduction: Dietary supplements can improve overall health and help managing some conditions. One of these supplements is “Biomin MK”. Its effects are well known, however its influence on epiphyseal cartilages is not described.
Methods: 126 male rats were separated into three groups. Group 1 comprised intact animals taken for the controls; group 2 consisted of the animals with tibia fracture modeled as 2.0 mm hole in the tibia; the animals in the group 3 received “Biomin MK” through oral gavage (90 mg/kg) after fracture modeling. HE stained sections of proximal epiphyses were put to light microscopy for morphometry of growth plate zones.
Results: As the result of fracture proximal growth plate of the humerus exhibited narrowing throughout the whole experiment. Narrowing occurred mostly due to osteogenic zone. “BiominMK” appeared to have a positive effect on post-fracture growth and formation of the humerus. Best results of BiominMK application were observed by the 30th and the 60th days of the experiment. Osteogenic zones widened by 7.06% and 8.38%, primary spongiosa amount increased by 4.81% and 6.29% and osteoblasts number increased by 7.86% and 6.54%.
Conclusions: Fracture of the tibia leads to inhibition of humerus growth and formation. Oral administration of “Biomin MK” after fracture results in restoration of the humerus growth plate functionality.

Keywords: Calcium,treatment,fracture,tibia

DIAGNOSTIC OF BCP-ALL WITH MASKED HYPODIPLOIDY USING MICROARRAYS – CASE REPORT

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Background: Acute lymphoblastic leukemia derived from B-cell precursor cells (BCP-ALL) is the most common leukemia among children. It is characterized by numerical and structural alterations of chromosomes. Hypodiploidy is associated with poor prognosis, so assessment of the patient's karyotype before starting treatment is important.
Case Report: We present the patient at the age of 10 who was admitted to the hospital on May 27, 2019 due to protracted infection. Additionally, petechiae and nosebleeds have been found. Laboratory tests showed WBC = 8x109 L, PLT = 35x109 L and HB = 11g/dL. In bone marrow blasts were observed in proportion of 78% and in peripheral blood in proportion of 46%. GTG banding and FISH technique are used in BCP-ALL diagnostics. Due to the small amount of bone marrow harvested (less than 0.5 ml), the patient's karyotype could not be performed. BCR/ABL1, ETV6/RUNX1 (DC, DF, Vysis), XL E2A, KMT2A (MLL) and MYC (DC, BAR, MetaSystems) probes were used. Single signals were seen for the ABL1, ETV6 and RUNX1 genes, which could indicate deletion or monosomy of chromosomes 9, 12 and 21. It was necessary to perform a microarray test CytoScan HD Affimetrix. The analysis showed loss of chromosomes 2,3,4,7,9,12,13,15,16,17,20 which confirmed hypodiploidy.
Conclusions: Microarray technique allowed to confirm the existence of a hypodiploid clone and hyperdiploidy in described patient. According to the AIEOP-BFM ALL 2017 the patient was qualified to the high-risk group and implemented treatment protocol.

Keywords: acute lymphoblastic leukemia, microarrays, oncology, hematology, genetics

A CHILD WITH KBG SYNDROME - CASE REPORT

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Background: KBG syndrome was described for the first time in 1975 and the term comes from the initials of the first three patients' surnames. Mutations in the ANKRD11 gene have been identified as a reason. Short stature, facial dysmorphisms, macrodontia, skeletal anomalies, and developmental delay are mainly enumerated as distinctive features of KBG syndrome. The aim of the study is to present patient's medical history and the diagnostic process.
Case Report: A girl born in 2015 was admitted to the genetic outpatient clinic in 2018 due to dysmorphic features and short stature. Developmental retardation, prominent ears, synophrys, bushy eyebrows, uneven teeth, high-arched palate, hypertrichosis on the back, hoarse voice, aphasia, flat valgus feet, and joint laxity were found. Diagnosis was based on microarray testing, copy-number variation analysis was performed using CytoScan 750K array. Genetic imbalance in the form of a deletion within the long arm of chromosome 16 in the 16q24.2q24.3 region (containing 1,543 Mbp) was shown. The deletion covers 37 genes (including ANKRD11) and it contains the region of the known 16q24.3 microdeletion syndrome (KBG syndrome, OMIM#148050). Parents were not carriers of that deletion.
Conclusions: The phenotypic features presented by the patient were reflected in the genetic test. KBG syndrome is genetically heterogeneous with possible de novo occurence, as here. Despite the fact that KBG syndrome is a rare discovery and its features are mainly mild and not prerequisite for diagnosis, it is necessary to pay special attention on them in order to refer patients to genetic counseling and make an accurate diagnosis.

Keywords: KBG syndrome, dysmorphia, developmental delay, microarrays

PREVALENCE OF ENTEROTOXINS IN STAPHYLOCOCCUS AUREUS ISOLATED FROM NURSING HOME RESIDENTS AND PERSONNEL

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Introduction: S. aureus is commonly found pathogen with great virulence potential. This bacteria was prodeced many toxins including thermostable enterotoxins responsible for human gastroenteritis. These extracellular proteins are the most common cause of staphylococcal food poisoning. The aim of this study was detected of following genes encoding staphylococcal enterotoxins: sea, seb, sec, sed and see.
Methods: In this study 235 strains of S. aureus were used. 140 strains were collected from nasal or pharyngeal swabs of 38 nursing home residents and 95 strains were isolated from 31 personnel. For detection of all investigated genes the technique of multiplex PCR was used. Genomic DNA was previously isolated from bacteria for this amplification using DNA Bacteria Kit (DNA-Gdańsk).
Results: Analysis of the electrophoretic separation of amplification products showed that 24 (10.21%) of the S. aureus isolates possessed the sea, 26 (11.06%) had the seb, and 4 (1.7%) possessed see gene. The sec and sed genes were detected least frequently in 2 (0.85%) isolates of S. aureus. Additionally, one of these enterotoxigenic isolates carried more than one toxin gene. In 182 (77.45%) strains of S. aureus, the enterotoxin gene was not detected.
Conclusions: The obtained results indicate the various presences of the different genes for enterotoxins. The most frequently were detected sea and seb genes, both in the personnel and residents of the nursing home. This may be due to the transmission of bacteria between nursing home residents and personnel. These studies confirm the need for epidemiological monitoring in nursing home.

Keywords: S. aureus, enterotoxins, sea, seb, sec, sed, see, gastroenteritis

DETECTION OF ETA, ETB, FEMA AND TST GENES IN STAPHYLOCOCCUS AUREUS STRAINS ISOLATED FROM UPPER RESPIRATORY TRACT FROM PEOPLE OF A NURSING HOME

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Introduction: Staphylococcus aureus is one of the pathogens isolated most often from the human body. This microorganism called a superbug because produce a variety of extracellular protein toxins such as the exfoliative toxins (ETA and ETB) and toxic shock syndrome toxin-1 (TSST-1). Furthermore, the femA gene is one of the genes encoding the pathogenicity of S. aureus. The presence of these genes is responsible for people skin and soft tissue infections. The aim of this study was to determine the prevalence of eta, etb, tst and femA genes in S. aureus isolates.
Methods: 235 isolates of S. aureus from nasal cavity and pharynx (140 from nursing home residents and 95 from personnel of a nursing home located in Lublin, Poland) were collected during one year from different seasons. Amplification of all investigated genes (eta, etb, tst and femA) were examined by multiplex PCR method.
Results: After amplification was detected four genes femA, eta, etb and tst with size of 132, 93, 226, 326 base pairs, respectively. Among the 235 isolates, all of them had femA gene, in 54 (22.98%) were found etb gene and 44 (18.72%) tst gene were contained. Only in one isolate eta gene was detected.
Conclusions: Our research showed regardless of person and season femA gene was detected in each isolates. The tst gene was detected in the personnel while the etb gene was appears in both resident and personnel. This could indicate on transfer of strains between people and the need to supervise such a appearance.

Keywords: eta, etb, femA , tst genes, Staphylococcus aureus ,exfoliative toxins , toxic shock syndrome toxin-1 , TSST-1, skin and soft tissue infections, multiplex PCR method,

STUDY OF THE ANTIHYPOXIC ACTIVITY OF THE HERB EXTRACT EUPATORIUM CANNABINUM L.

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Introduction: At this time hypoxia is one of the most common pathological processes that accompanies many diseases. Modern synthetic antihypoxants (piracetam, hypoxen) have insufficient effect and multiple pronounced side effects. Consequently, research in the pharmaceutical industry has intended to discover new more effective drugs without pronounced side effects. The greatest interest for the development of this group of drugs is Eupatorium cannabinus L. (Asteraceae) – this is due to a fairly wide composition of biologically active substances: polysaccharides, essential oils, polyphenols, triterpenoids, saponins, alkaloids, phenolcarboxylic acids, coumarins, which determines a wide range of pharmacological action. The purpose of the present research is to explore antihypoxic activity of the herb extract E. cannabinum L.
Methods: The object of the study was an extract of the herb E. cannabinum L. The study of antihypoxic activity was carried out by the method of normobaric hypoxia with hypercapnia in male mice of the CD-I line. The indicators were recorded according to the last agonal inspiration of the animals.
Results: The results of the research showed that with the injection of a minimum dose of 50 mg / kg of E. cannabinum L. herb extract, there is an increase in the time of the onset of the last agonal inspiration (33.04 ± 1.93 s) compared with hypoxic control (31.67 ± 1.8 c), which suggests the presence of antihypoxic activity in the studied plant. With an increase in the dose of the administered extract, this indicator grows: at a dose of 100 mg / kg, the time of the last agonal inspiration was 36.1 ± 1.86 s, at 200 mg / kg - 39.36 ± 1.97 s, and at a dose of 300 mg / kg - 42.0 ± 1.87 s. In the compared group receiving piracetam at a dose of 300 mg / kg, an indicator of 35.67 ± 1.99 s was noted, which indicates a lower level of antihypoxic action in comparison with the E. cannabinum L. group, which received an equivalent dose.
Conclusions: Thus, the results of the experiment confirm the presence of the antihypoxic activity of the extract of the herb E. cannabinum L., as well as provide an opportunity for further study of its use in the antihypoxic therapy.

Keywords: Eupatorium cannabinum L., method of normobaric hypoxia, antihypoxic activity.

IMPACT OF ATROVASTATIN AND ROSUVASTATIN ON SCORE VALUE IN PRIMARY PREVENTION OF CARDIOVASCULAR DISEASE

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Introduction: Systematic COronary Risk Evaluation (SCORE) map is used in order to identify patients who are at the most risk for the occurrence of a fatal cardiovascular (CV) event. This evaluation is based on gender, age, total cholesterol, systolic blood pressure and smoking status.We investigated the potential improvement in the value of SCORE by adding rosuvastatin and atorvastatin in therapy in group of patients without prior CV event.
Methods: Thirty patients with SCORE value 10% or higher were randomly divided into the 2 groups: first group (atorvastatin 10 mg every day, n=14) and second group (rosuvastatin 5 mg every day, n=16) for 15 weeks. The primary endpoint of the study was to evaluate changes in SCORE status in the group receiving rosuvastatin and in the group receiving atorvastatin, and the secondary endpoint was to investigate is there any difference in changes in SCORE status in between this two groups.
Results: The study was ended after a mean follow-up period of 15 weeks. Results of the primary endpoint showed that atorvastatin and rosuvastatin both lowered value of SCORE from baseline values ($P<0.05$), but there was no difference in changes in SCORE status in between two groups receiving atorvastatin and rosuvastatin respectively ($P >0.05$).
Conclusions: Therapy with both statins significantly improved SCORE values which implicates their importance in reducing absolute cardiovascular risk in primary prevention of cardiovascular disease. This study does not find difference between two statins, and supports their use as clinically equivalent in primary prevention of cardiovascular disease.

Keywords: SCORE, statins, cardiovascular risk

Poster Session

PECULIARITIES OF PARTIAL RENAL FUNCTIONS IN THE EARLY PERIOD OF ALLOXAN-INDUCED EXPERIMENTAL DIABETES

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Introduction: Acid-regulating renal function is known as one of the most sensitive indicators of the functional state of the nephron. The aim of the study was to study the condition of acid-regulating renal activity in the early period of experimental diabetes mellitus (DM).
Methods: Experimental modeling of DM was performed by the intraperitoneal administration of Alloxan monohydrate to 10 white non-linear mature male rats in the dose of 160 mg/kg. On 11th day after the induction of the disease, diabetic rats and 10 intact animals of the control group were loaded with water (5% of body weight), placed into individual cages for 2 hours to collect urine samples for the further evaluation of kidney functional state by the clearance method.
Results: On 11th day of the experiment an active release of titrated acids and ammonia compounds exceeded the control values by 40,3% and 12,3% respectively, the excretion of ammonia, standardized in volume of glomerular filtrate, was reliably lowered (by 21,3%, $P<0,001$) as compared to the controls. Ammonia ratio demonstrated a downward tendency as well, accompanied by non-reliable reduction of the urine pH. Moreover, an excretion of active hydrogen ions raised, and after standardization by volume of glomerular filtrate remained 22,2% ($P<0,05$) higher than in controls.
Conclusions: The mechanisms of urinary acidification associated with acido- and ammoniogenesis remain unchanged on 11th day of alloxan-induced diabetes, however acid-regulating renal function demonstrates the tendency to augmentation and certifies the high efficacy of renal transport mechanisms for effective clearance of extracellular fluid of excessive acidic metabolites and ammonia in DM.

Keywords: experimental diabetes mellitus, alloxan, acid-regulating renal function

GLUCOSINOLATE AND POLYPHENOL PROFILES OF NASTURTIUM OFFICINALE (WATERCRESS) MICROSHOOT CULTURES GROWN IN PLANTFORM BIOREACTORS

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Introduction: Nasturtium officinale R. Br. (Brassicaceae), is an aquatic, partially protected, perennial plant in Poland. It possesses scientific proven e.g. antioxidant, hepatoprotective and anticancer activities. The biological activity of the plant is conditioned by a rich chemical composition, e.g. glucosinolates (GSLs), polyphenols (PPs) and terpenoids [1]. The aim was to investigate the qualitative and quantitative content of GSLs and PPs compounds in N. officinale microshoot cultures grown in temporary immersion systems, in Plantform bioreactors (Sweden).
Methods: The microshoot cultures were initiated from seeds obtained from Garden of Medicinal Plants, Faculty of Pharmacy, Jagiellonian University Medical College in Cracow. The cultures were maintained in liquid Murashige and Skoog [2] medium with 1 mg/L 6-benzyladenine and 1 mg/L 1-naphthaleneacetic acid over 10 and 20 days growth periods (3 series). For UHPLC-DAD-MS/MS analysis of GSLs, the lyophilized biomasses from in vitro cultures was extracted with methanol/H2O (70:30 v/v) [3,4]. For HPLC-DAD analyses of PPs, the methanolic extracts from biomasses were used [5].
Results: In the studied cultures four GSLs were found: gluconasturtiin, glucobrassicin, glucohirsutin and 7-(methylsulfinyl)heptyl GSL. The main compound was gluconasturtiin (max. 268.04 mg/100 g DW, 20 days). Among PPs, in extracts the presence of three phenolic acids: ferulic, protocatechuic and sinapic acids and additionally rutoside were confirmed. The main compounds were sinapic acid (max. 114.83 mg/100 g DW, 10 days) and ferulic acid (max. 87.78 mg/100 g DW, 20 days).
Conclusions: Our study showed innovative possibilities of secondary metabolites production in N. officinale bioreactor cultures. Acknowledgements: This study was supported by the Polish Ministry of Science and Higher Education (N/42/DBS/000122). References: 1. Klimek-Szczykutowicz M., Szopa A. and Ekiert. H. Fitoterapia 2018,129:283-292 2. Murashige T. and Skoog F. Physiol. Plant. 1962,15:473–497 3. Blažević I. et al. Molecules 2019,24:741 4. Grosser, K. and van Dam N.M. J. Vis. Exp. 2017,121:e55425 5. Ellnain-Wojtaszek M. and Zgórka G. J. Liquid Chromat. Rel. Technol. 1991:22,1457-1471. 6. Sułkowska-Ziaja K. et al.. Nat. Prod. Commun. 2017, 12: 363-366.

Keywords: in vitro cultures, temporary immersion system, Plantform bioreactor, glucosinolates, polyphenols

IS THERE A RELATIONSHIP BETWEEN SEMINAL ZINC CONCENTRATION AND SPERM QUALITY IN OVERWEIGHT MEN?

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Introduction: Zinc (Zn) is an important component of the normal functioning male reproductive system. In addition, Zn deficiency has been linked with male infertility. This study aimed to investigate a correlation between the basic sperm parameters and the concentration of Zn in seminal plasma of normal and overweight men.
Methods: The study included 130 men who were screened at a reproductive clinic. The participants were divided into two groups according to the calculated body mass index (BMI, kg/m2): control group (CG) with normal value (18.5-24.9), and pre-obesity (25.0-29.9). The main sperm parameters were evaluated according to the WHO Guidelines (2010). We also calculated motile sperm concentration (MSC) and total motile sperm count (TMSC).
Results: The main sperm parameters did not differ significantly between the experimental groups, except slightly lower normal morphology ($p=0.017$). Furthermore, pre-obese group showed significantly decreased TMSC ($p<0.01$) while MSC remained unchanged. The overweight men had higher seminal Zn concentration by 20% compared to CG ($p=0.002$). Within all patients, a seminal Zn was weakly positively correlated with sperm concentration ($r=0.18$) and BMI values ($r=0.25$); and negatively correlated with normal morphology ($r=-0.19$).
Conclusions: Most of the basic sperm parameters didn’t change with the growth of BMI, except reducing normal morphology and total motile sperm count. However, the levels of seminal Zn were increasing in pre-obese patients. We suggest that it may be related to the involvement of Zn in the stabilization processes of cell membrane and chromatin, as well as to the Zn-mediated reduction of oxidative stress in overweight men.

Keywords: Zinc, sperm quality, BMI

THE HEAVY METALS IMPACT ON THE HEAT SHOCK PROTEINS PRODUCTION IN THE RATS ENDOMETRIUM

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Introduction: The development and existence of the organisms during the evolution became possible only due to the complex of adaptive mechanisms to the environmental conditions. Numerous signaling inducible and constitutive proteins are produced as an adaptive response to different stresses. Heat shock proteins (chaperones) are one of the primary protectors of the physiological extra- and intracellular homeostasis and ontogenesis stability. The biological role and properties of chaperones depend on their molecular weight; the peculiarities of their generation may variate, depending on the studied organ and stress factors. Simultaneously, the role of chaperones in the molecular activity of endometrium is a complex process and raises many questions. Aim: To study the peculiarities of Heat shock proteins regulation in the rats' uterine endometrium under the influence of the heavy metal salts.
Methods: The uteri of the laboratory rats (n=32) were used in this study. During 30 and 90 days, the rodents took the water, saturated by the toxicant mixture of the heavy metal salts (Zn/Cu/Mn/Fe/Pb/Cr). The immunohistochemical staining was performed with Hsp70 and Hsp90? antibodies. The reaction was evaluated by a semiquantitative scoring based on the intensity of the nuclear and cytoplasmic staining – negative reactivity, weak, moderate, and strong staining.
Results: A significant accumulation (?<0.001) of the heavy metals in the uterine tissue of the rats leads to the imbalance in the generation of the heat shock proteins in the endometrium. According to the experimental scenario, it was observed that Hsp70 and Hsp90 expressions were increased (from moderate to strong staining; ?<0.01) in both endometrial epithelium (luminal and glandular) and endometrial stromal cells, compared to control (local weak positive Hsp70/Hsp90 cytoplasmic and nuclear staining). Moreover, the positive predominance of the nucleus reaction was significantly pronounced.
Conclusions: The influence of the heavy metal salts on the rats' body contributes to the disorders in the generation of the heat shock proteins in the endometrium. Increased synthesis of the chaperones may be caused by the activation of the compensatory processes for the cellular apparatus stabilization to protect the reproductive properties of the living organisms against the chemical toxicants.

Keywords: Heat shock proteins, chaperones, endometrium, uterus, heavy metal salts

THE EFFECT OF HYPERGLYCEMIA ON THE STATE OF MUSCLE TISSUE IN CHILDREN WITH TYPE 1 DIABETES MELLITUS

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Introduction: Diabetic myopathy is a clinical condition characterized by decreased muscle mass and skeletal muscle function that has been a little bit studied in children.
Methods: There were 87 children with T1DM from 11 to 17 years old. According to the level of glycemic control all children were divided into 3 groups. Group 1 is 15 patients with ideal and optimal glycemic control, group 2 is 22 children with suboptimal glycemic control, group 3 is 50 children with glycemic control with a high-risk to life. The control group consisted of 23 practically healthy kids. All children were held the ultrasound examination of the thigh and back muscles group according to the standard technique.
Results: It was revealed the decrease in the thickness of the studied muscle groups in children of group 3 (thigh muscles - 2.54 ± 0.1 sm; back muscles - 2.38 ± 0.08 sm) compared to the control group (2.86 ± 0.1 sm , 2.77 ± 0.14 sm, respectively, $p < 0.05$), as well as the muscle-connective tissue coefficient (MSC) in group 3 (MSC of the thigh muscles - 1.11 ± 0.05 sm; MSC of the back muscles - 1 , 31 ± 0.03 sm) compared with the control group (1.26 ± 0.05 sm; 1.44 ± 0.05 sm, respectively, $p < 0.05$).
Conclusions: Unsatisfactory glycemic control leads to changes in the ultrasound picture of skeletal muscles in children with T1DM. It is characterized by the decrease in muscle thickness and changes in muscle architectonics.

Keywords: Diabetic myopathy, children, type 1 diabetes mellitus, ultrasound examination

CHANGES IN THE BRAIN CORTICOSTERONE LEVEL IN CHRONICALLY STRESSED RATS TREATED WITH MEPHEDRONE – APPLICATIONS TO ADDICTION STUDIES

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Introduction: Stressful situations accompany our daily lives. Exposing laboratory animals to various stressors has been repeatedly found to produce behavioral and neurobiological alterations that resemble clinical findings in people. One of such alterations is an increase of corticosterone level, a hormone released in the response to stress in rodents. Stress can be also considered as one of the vulnerability factors contributing to the development of addiction. Mephedrone is a commonly abused novel psychoactive substance (NPS) representing the cathinones class; however, the interactions between chronic unpredictable mild stress (CUMS), mephedrone administration and corticosterone level remain underexplored. Thus, the aim of the presented study was to evaluate the impact of CUMS combined with mephedrone administration on corticosterone level in rats hippocampus and prefrontal cortex.
Methods: Rats were subjected to different kinds of random mild stressors for 22 days. Mephedrone (5 mg/kg) was administered once a day during the last 6 days of CUMS protocol. Subsequently, rats were decapitated and the hippocampus and the prefrontal cortex were carefully dissected. The determination of corticosterone level in brain tissue homogenates was carried out using the enzyme-linked immunosorbent assay (ELISA).
Results: The results showed that CUMS significantly increased corticosterone level in the hippocampus as well as in the prefrontal cortex in mephedrone- and saline-treated animals.
Conclusions: CUMS increases brain corticosterone level in control and in mephedrone-treated rats, therefore this hormone can be involved in the behavioral effects of mephedrone in rats.

Keywords: mephedrone, corticosterone, stress, hippocampus, prefrontal cortex

HELICOBACTER PYLORI PECULIARITIES IN CHILDREN WITH GASTRITIS

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Introduction: Helicobacter pylori (HP) is a gram-negative bacterium, classified by the World Health Organization as a Group 1 carcinogen and it's the primary identified cause of gastric cancer among adults. The infection usually occurs during childhood, but most infected children are asymptomatic. Aim of the study: To delineate the particularities of HP infection in children.
Methods: A 2-year prospective study was performed on a sample of 147 patients, between 1-18 years of age, divided into 2 groups depending on the histopathological result of the gastric biopsy specimens: 1st group - 50 patients with gastritis caused by HP and the 2nd group - 97 patients with non-HP gastritis.
Results: Poor socio-economical environment was significantly associated with HP infections (p=0,009). The highest incidence of HP infection was between 7-14 years of age. The most common symptoms encountered in both groups were abdominal pain, epigastric pain, heartburn, nausea, loss of appetite and vomiting without significant differences between the two groups. Both biliary and gastroesophageal reflux were more common among children with non-HP gastritis. Leukocytes and neutrophils were higher in HP group, as well as erythrocyte sedimentation rate. Macroscopic cobble stone aspect of the gastric mucosa was significantly more frequent encountered in children with HP gastritis ($p<0.00001$). The urease test was significantly associated with the presence of HP infection ($p<0.00001$)
Conclusions: Poverty is a risk factor for HP infection. Cobble stone aspect of the gastric mucosa might predict the presence of HP. The rapid urease test is useful for the diagnosis of this infection in children.

Keywords: Helicobacter pylori ,gastritis. children.

FEATURES OF BIOELECTRICAL IMPEDANCE ANALYSIS IN PATIENTS WITH COMORBID PATHOLOGY: CHRONIC PANCREATITIS AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Introduction: Bioelectrical Impedance Analysis (BIA) is a non-invasive diagnostic test used for estimating human body composition by measuring the electrical resistance of the different body parts. This study makes it possible to obtain reliable estimates of fat, protein and water metabolism, as well as a number of metabolic processes in the body. The aim of the study is to determine the features of the BIA method in patients with chronic pancreatitis (CP) and chronic obstructive pulmonary disease (COPD).
Methods: We examined 30 patients with CP and 54 patients with comorbid pathology - CP and COPD aged 30-65 years (average age – 52.36 ± 1.83 years). Fecal elastase-1 level was examined by using the Pancreatic Elastase ELISA (BIOSERV Diagnostics). Biometric measurements were performed on a body composition analyzer BC-601 (TANITA, Japan).
Results: Patients with COPD have a decrease in muscle and fat mass, what is characteristically in combination with CP and severe exocrine pancreatic insufficiency. The group of patients with severe EPI are characterized by symptoms of weight loss. It happens as a result of absorption disorders of nutrients (malabsorption and maldigestion syndromes). In the groups of moderate and mild EPI fat and cell mass were significantly lower than normal rate in control group. There is a positive correlation between fecal elastase-1 and the level of patient' metabolism ($p < 0,05$).
Conclusions: Bioelectrical Impedance Analysis (percentage of fat mass, visceral fat level and muscle mass) correlates with the level of fecal elastase-1, which can be used as an additional criterion for the severity of chronic pancreatitis, also to monitor the effectiveness of substitution therapy.

Keywords: Bioelectrical Impedance Analysis, chronic pancreatitis, chronic obstructive pulmonary disease, exocrine pancreatic insufficiency, fecal elastase-1, comorbid pathology

WARFARIN THERAPEUTIC DOSE DEPENDENCE ON CYP2C9, CYP4F2, VKORC1 GENES POLYMORPHISMS IN PATIENTS WITH ATRIAL FIBRILLATION

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Introduction: Warfarin (WF) is a widely used drug to prevent thromboembolic events in patients with atrial fibrillation (AF). Its dose varies greatly due to a number of factors, including genetic features. The aim of the study was to establish relationship between CYP2C9, CYP4F2, VKORC1 genes polymorphisms and WF therapeutic dose in patients with AF.
Methods: A retrospective cohort study was conducted in 60 AF patients receiving WF who were observed at the specialized anticoagulant therapy monitoring office of the ZSMU University Clinic during one year. CYP2C9, CYP4F2, VKORC1 genes polymorphisms were studied by multiplex real time polymerase chain reaction.
Results: The mean CHA2DS2-VASC score was 3.43 ± 0.18, HAS-BLED score – 2.2 ± 0.13; the WF dose median was 5 mg (3.75; 6.25). It was found out that the VKORC1 mutant allele A presence increased the probability of WF dose less than median in 7.00 times (95% CI 1.982-24.716; $p < 0.05$), and the CYP4F2 mutant allele T increased the probability of WF dose more than median in 6.263 times (95% CI 1.583-24.780). Statistically significant effect of CYP2C9 gene polymorphism on WF dosing was not observed.
Conclusions: VKORC1 and CYP4F2 genes polymorphisms are associated with warfarin dose variation and should be taken into account in warfarin dosing.

Keywords: atrial fibrillation, warfarin, genes polymorphism, dosing

BODY MASS INDEX AND HYPERTENSION - CLINICAL AND PARACLINICAL ASPECTS

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Introduction: Arterial hypertension, an extremely frequent pathology worldwide, with approximately 45% prevalence among the adult population from our country, has, among other risk factors, obesity commonly associated with an inappropriate lifestyle. Obesity causes a series of morphopathological changes, which affect all the organs and tissues. The objective of this study is to verify the correlation between usual laboratory tests (which can be arguments for the presence of inflammation) from hypertensive patients with or without an overweight status, referred for 24-h ambulatory blood pressure monitoring (ABPM).
Methods: After obtaining the informed consent, 97 patients were enrolled in the study (the study group contained 57 people with excessive body weight and the control group contained 40 people with normal body weight). The results of some laboratory tests (Complete Blood Count, Red blood Cell Distribution Width and Platelet count, C Reactive Protein, Erythrocyte Sedimentation Rate, Fibrinogen, Serum uric acid) were correlated with blood pressure results after ABPM.
Results: The dipper profile was more frequent in hypertensive patients with normal weight, whereas the non-dipper pattern was more frequent in patients presenting an inflammatory syndrome (confirmed by laboratory results). Excessive weight has been correlated with other comorbidities and required increased medication, compared to the control sample.
Conclusions: The connection between the variation of the arterial pressure throughout the ABPM and the level of some inflammatory markers may represent a consequence of vascular reactivity alteration in the context of subclinical inflammation already present in overweight patients.

Keywords: Hypertension, Dipper, Obesity, Overweight, Inflammation

RUPTURED RENAL ANGIOMYOLIPOMA AS A RARE CAUSE OF ACUTE ABDOMEN. CASE REPORT.

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Background: Angiomyolipomas (AMLs) are the most common benign renal tumours, with a prevalence varying between 0.2% and 0.6% and a female predilection. In 80% they occur sporadically, about 20% develop in association with tuberous sclerosis complex (TSC) or lymphangioleiomyomatosis (LAM). Usually they are single, small and clinically asymptomatic. In very rare cases (less than 15%) they may rupture causing life-threatening extra peritoneal bleeding.
Case Report: A 55 year old woman was admitted to Clinical Hospital No 4 in Lublin to the emergency department with a symptom of an acute abdomen. Abdominal CT scan revealed massive intraperitoneal bleeding due to ruptured AML (Wünderlich's syndrome).
Conclusions: There are three main etiologies of AML’s rupture and bleeding. The most common type is Wünderlich's syndrome, a spontaneous retroperitoneal haemorrhage of non-traumatic origin. It occurs in about 50% of patients with AML over 40 mm. The second type is traumatic bleeding (falls from heights, traffic accidents). The rarest type is an AML rupture during pregnancy, which mimics an extra-uterine gravidity clinically. AML can be easily imaged and controlled in ultrasound (US), computed tomography (CT) and magnetic resonance imaging (MRI). Fat density within a non-calcified renal mass remains the most important diagnostic finding of AML. When an AML increases in size or becomes symptomatic then embolisation via the renal artery should be considered.

Keywords: renal angiomyolipoma, rupture, acute abdomen

CAN WE DEFEAT SCHISTOSOMIASIS - A NEGLECTED TROPICAL DISEASE? EVALUATING LIVER PATHOLOGY MARKERS FOR TESTING OF A NOVEL ANTISCHISTOSOMAL TREATMENT

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Introduction: Schistosomiasis, a parasitic neglected tropical disease, represents a global health issue. WHO has set a goal to eliminate the disease by the year 2025. Schistosoma cause a complex chronic multiphasic infection and multiorgan damage with no single marker of disease progress. Rising resistance to its current first line treatment, Praziquantel, enhances the need for new therapeutics to meet WHO goals. In cooperation with research project searching for novel antischistosomal drug (protease inhibitor) our team provide in vivo drug efficiency tests. To achieve a successful study of novel treatment efficiency, we need to set, optimize and monitor multiple pathology markers. Because chronic granulomatous inflammation of liver is main clinical feature of Schistosomiasis, this study aims to optimize and monitor several reliable and reproducible liver damage markers.
Methods: Three groups of mice were infected with different doses of larvae and dissected in various phases post infection. Worm count estimation was done and liver samples for histology and egg counts estimation were collected. Liver histology slides were stained with Hematoxylin-Eosin (granuloma presence and morphology) and SiriusRed (fibrotization level). Blood samples were taken and liver enzyme tests were performed.
Results: In all successfully infected mice, we set counts of worms, eggs per gram of liver; granulomas were described and classified; liver fibrotization and liver enzyme levels were tested.
Conclusions: We successfully optimized all pathology markers we set. This achievement allows us to perform successful comparative studies of novel treatment efficiency. All the markers will be monitored in treated and untreated infected mice. AZV NV180500345; PROGRES Q25; SVV

Keywords: Schistosomiasis, parasite, neglected infectious disease, novel treatment, liver pathology

PULMONARY EMBOLISM DIAGNOSIS IN PREGNANT WOMEN WITH ANGIO-CT OF THE PULMONARY ARTERIES - CAN IT BE USED IN CONNECTION WITH EXPOSURE TO RADIATION?

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Introduction: During pregnancy, the risk of venous thromboembolism (VTE) increases approximately four to six times, and is highest in the immediate postpartum period. Pulmonary embolism (PE) is one of the leading causes of non-obstetric maternal death. Aim of the study: Assessment of the effectiveness of CT angiography (CTPA) in the diagnosis of PE in pregnant women, with particular consideration of the risk of teratogenesis and carcinogenesis for the mother and the fetus.
Methods: The scientific literature indexed in the PUBMED database for the last 15 years was reviewed. Descriptions of anio-CT examinations performed on pregnant women with suspected PE at the 1st Department of Medical Radiology of the Medical University of Lublin in the years 2000-2020 were analyzed.
Results: Imaging diagnostics is generally considered clinically appropriate in pregnant patients with suspected PE. The advantages of CTPA include its rapidity, widespread accessibility, high specificity and sensitivity in PE diagnosis and capacity to help diagnose alternative causes. Radiologists should be aware of the radiation risks to the mother and the fetus, including the risk of teratogenesis and carcinogenesis in line with the principle of stochastic effect. However that fetal risks from radiation doses of less than 50 mGy are negligible.
Conclusions: CTPA can be considered safe for the evaluation of suspected PE in pregnancy when appropriate protocols designed for the pregnant woman and dose reduction strategies are applied.

Keywords: CT pulmonary angiography, pulmonary embolism, pregnant women

Psychiatry, Psychology and Human science in Medicine

PREDICTORS ASSOCIATED WITH STUDIES AND LIFESTYLE AND SUBJECTIVE FEELING OF DEPRESSIVE SYMPTOMS AMONG MEDICAL STUDENTS.

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Introduction: According to an analysis based on a research conducted in 43 countries among medical students, 27.2% of them suffer from depression or show depressive symptoms and 11.1% of them experience suicidal ideation. There are many reasons behind this phenomenon, such as: workload, time pressure and academic requirements. The aim of the study was to investigate the prevalence of subjective feeling of depressive symptoms among medical students and to determine predictors of this phenomenon that are related to studies and student's lifestyle.
Methods: A total of 1023 medical students from each year of education and 18 Polish universities took part in the study. The research tool was an author's questionnaire.
Results: 52.79% of the respondents had noticed symptoms that might had pointed to depression during the course of their medical studies. The research suggests that predictors of subjective feeling of depressive symptoms among medical students are: repeating a university subject or a year, low self- assessment of academic performance during studying, considering dropping out of university, low satisfaction from the choice of studying medicine, reaching for alcohol in order to discharge negative emotions, not having interests that enable to relax, not doing sports regularly, not participating in social gatherings often enough, not sleeping enough, having problems with maintaining stable body weight and not being religious.
Conclusions: The prevalence of subjective feeling of depressive symptoms among medical students is high. Further research needs to be done in order to explore more factors associated with depressive symptoms in the above-mentioned group.

Keywords: depression, medical students

PREVALENCE AND FACTORS ASSOCIATED WITH DEPRESSIVE SYMPTOMS AMONG POLISH DENTISTRY STUDENTS.

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Introduction: A research conducted in Australia showed that 24% of dental students had moderate or above levels of depression. The aim of the research was to investigate the prevalence and severity of depressive symptoms among Polish dental students, determine factors associated with this phenomenon and examine the relationship between these factors and depressive symptoms.
Methods: A total of 247 dental students from each year of education and 10 Polish universities took part in the study. The research tool was an author's questionnaire and a Polish-language version of 9-Item-Patient Health Questionnaire (PHQ-9). Answers were collected in April of 2020 through placing the research tool on groups dedicated to dental students on Facebook. The questionnaire was anonymous and participation in the research was voluntary.
Results: 53.85% of the respondents were provisionally diagnosed with major depression. 13.36% of the participants were found to have none-minimal depression severity; 32.79% – mild depression severity; 28.34% – moderate depression severity; 16.60% – moderately severe depression severity and 8.91% – severe depression severity. The research suggests that not doing sports regularly and not getting enough sleep are factors associated with depression among Polish dental students
Conclusions: Depressive symptoms among Polish dental students are common. Further research is needed to identify more factors associated with depression in this population in order to develop strategies for prevention and treatment of this disorder.

Keywords: depression, dental students

NEW OPTION FOR SLEEP DISORDERS CORRECTION IN ACTING MILITARY SERVICES.PSYCHOPHARMACOLOGICAL VS PSYCHOTHERAPEUTIC APPROACH.

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Introduction: Paper presents the original study on comparative analysis of psychotherapeutic and pharmacological approach for inorganic sleep disorders correction in acting military personnel.
Methods: Clinical trial is held at Therapeutic department in Zaporizhzhia Military Hospital (Zaporizhzhia, Ukraine). With informed consent we examined 44 combatants, males aged 19,4-58,1 with inorganic sleep disorders during their inpatient treatment. 20 patients, who voluntarily chose psychotherapy for sleep relief, formed Cohort 1. Cohort 2 was formed with 24 patients, who preferred psychopharmacotherapy (benzodiazepines). Average treatment course was 8.20 ± 3.83 days. Sleep quality before and after treatment was assessed via clinical interview, Pittsburg Sleep Quality Index (PSQI) and Epworth sleepiness scale rate (ESSR).
Results: Both cohorts' participants reported about sleep relief due to the shortened falling asleep time, reduced nocturnal wake-ups and early rises frequency. PSQI fell from average 11,74±3,12 and 11,79±3,23 before treatment to 6,12±3,42 and 6,04±3,12 just before discharge from the clinic in Cohort 1 and Cohort 2, respectively. Sleep improved about three days earlier in Cohort 2 comparing to Cohort 1. 9 patients (37,5 %) on medication noted worse daytime sleepiness comparing to Cohort 1 participants whose sleep improved later however it was associated with better concentration and vitality throughout the day.
Conclusions: The new developed technique for psychotherapeutic sleep correction shows almost equivalent effectiveness comparing with psychopharmacotherapy. Moreover, it has specific advantages for acting military personnel, such as absence of heavy head or daytime sleepiness and better concentration so far as these characteristics significantly affect the quality of combat mission accomplishment.

Keywords: psychotherapy technique, inorganic sleep disorders, insomnia, acting military personnel, benzodiazepines, sleep quality, daytime sleepiness, combatants.

ALEXITHYMIA AND PSYCHOSOCIAL ADAPTATION IN MEN WITH SUBSTANCE USE DISORDERS AND DIFFERENT MARITAL STATUS

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Introduction: Alexithymia is an emotional disorder that can cause a breach of the therapeutic alliance with the psychotherapist. As known, working with relatives should one of the components of rehabilitation of patients with substance use disorders. However, the effect of alexithymia on the quality of psychosocial adaptation of addicts with different marital status remains uncertain. The aim of the study is describing emotional disturbances and features of psychosocial adaptation in patients with substance use disorders according to their marital status.
Methods: Study include 37 men with substance use disorder on the rehabilitation stage, who were divided into 3 groups according their marital status: married, unmarried and divorced. The TAS-20R was used for determination of the level of alexithymia. The psychosocial adaptation was assessed by the R. Diamond and C. Rogers method. Data analysis was performed using IBM SPSS Statistics 23.0 with descriptive statistics methods, Kruskal-Wallis test and Mann-Whitney criteria as post hoc.
Results: Alexithymia in the group 1 and 2 was on elevating level, and statistically significant higher in group 1 compare to group 3. In the group 1 Difficulties in identifying feelings was higher compare to group 2 and 3. The highest level of Adaptation was examined in patients of group 1. In the group 2 we measured the lowest level of Acceptance of others and Internality. Inferiority as subcomponent of Dominance showed the highest level in group 3 compares to other.
Conclusions: Marital status and emotional disturbances should be considered during psychosocial adaptation of patients with substance use disorders.

Keywords: alexithymia, marital status, psychosocial adaptation, substance use disorder

ANXIETY IN PANDEMIC TIMES OF COVID-19 : A NARRATIVE REVIEW

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Introduction: The first cases of pneumonia of unknown origin were identified in China in early December 2019. With the advent of COVID-19, caused by the new coronavirus, there was an increase in the rates of stress, anxiety and depression.
Methods: This is a bibliographic review, with qualitative research and analysis of studies available in the PUBMED, Scielo and Cochrane databases.
Results: The World Health Organization has declared COVID-19 a public health emergency. Studies have shown that health problems are common in pandemic times. According to cognitive-behavioral models; triggering events, cognitions and adverse behaviors play an important role in the development and maintenance of anxiety. However, the role of characteristics of anxiety disorder and how to deal with it during the current pandemic has not yet been studied, but it is plausible to consider psychological, physical stress and high rates of morbidity and mortality worldwide since its outbreak. extreme measures adopted during the pandemic have changed lifestyles and social relationships and have probably generated deep levels of anxiety. Therefore, it is reasonable to speculate that psychological conditions may be compromised during the pandemic.
Conclusions: It is believed that it is necessary for the medical community and government health agencies to establish strategies for coping with exacerbated anxiety and its consequences, since such consequences will still occur in the medium and long term, until the moment of total remission of the disease and remnants it represents.

Keywords: Pandemic, COVID-19, anxiety

MOTIVATIONS FOR AESTHETIC MEDICINE PROCEDURES. A SURVEY AMONG 199 PATIENTS AIMED AT DYSMORPHOPHOBIA FEATURES.

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Introduction: Dysmorphophobia (BDD, body dysmorphic disorder) is a disease characterised by focusing on an imagined or a minimal defect in the appearance. Patients who suffer from this disorder believe that part of their body is ugly or deformed, even if it is not noticable by others. It affects about 1-3% of general population, whereas this value ranges from 5 to 15% among aesthetic medicine patients. The main aim of this study was to evaluate the presence of BDD features among aesthetic medicine patients. The second goal was to analyze the motivations for minimally invasive aesthetic treatments.
Methods: A total of 199 patients: females (95%), males (1.5%), other/ didn't answer (3.5%) of private aesthetic clinic were examined with the use of a self-assesed anonymous questionnaire, which contained 24 questions concerning demographic data, frequency and type of aesthetic treatments, motivations and features of dysmorphophobia.
Results: Results show that 11% of patients presented at least three features of BDD. Main motivations were the desire to achieve a "fresh look" (96.48%), the presence of the signs of aging (87.92%) and the will to invest in themselves (71.85%). 68.34% of respondents felt more confident after aesthetic treatment. 23.11% hid the fact of getting this type of treatment.
Conclusions: A significant percentage of aesthetics patients may have the features of dysmorphophoby, therefore physicians should be acknowledged with the clinical picture of this disorder.

Keywords: dysmorphophobia, BDD, psychiatry, aesthetic medicine, motivations

STUDY OF ADJUSTMENT DISORDER IN PATIENTS WITH A HISTORY OF SUICIDE ATTEMPT AND ITS ASSOCIATION WITH MARITAL ISSUES

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Introduction: Several studies state that adjustment disorder leads to suicidal behaviour and that it is more common in married individuals; however, adjustment disorder in patients of suicide attempt, and its association with various marital issues faced in India, remains to be established. Adjustment disorder is a diagnosis given following a significant psychosocial stressor from which an individual has difficulty recovering. Marital issues worsen when the relationship between a married couple erodes, such that they cannot ordinarily restore the relationship. It leads to the breach of domestic anticipation, often leading to a divorce or dissolution of the marital relationship. The relationship between adjustment disorder in patients with a history of suicide attempt and its association with marital issues is complex and may have association with various factors like demographic profile, clinical diagnosis, marital profile and the stressors faced. Furthermore, certain observations in India are diametrically opposite to those studied in the West or other countries.
Methods: • This was a cross-sectional study which included persons referred to psychiatric OPD of a teaching tertiary care hospital in central India for suicide attempt, who are legally married and without any major Psychiatric Disorders. • Each participant was individually interviewed along a special proforma prepared for the study. • Diagnosis of adjustment disorder was made based on DSM 5 & rating scale of Brief Psychiatric Rating Scale was administered.
Results: • Majority of the participants were females (72%) and below 25 years (56%), with ethnicity and social standing different from spouse (70%). • Majority (72%) used chemical methods to attempt suicide, with most having a mild to moderate severity of attempt (96%) and interpersonal problems reported as reason for attempting suicide by all. • Adjustment disorder as per the DSM 5 criteria was present in 32% participants and impulsive deliberate self-harm could be diagnosed in rest. • Marital profile suggests that majority were living together though 32 % had been living separately at the time of interview, most (78 %) married for up to 4 years. • Though 40 % of the participants were employed, spouses of half were unemployed at the time of attempt. Majority were from a joint family and reported strained relationship with family after marriage. • Domestic violence was reported by many (72%). Interpersonal problems included extramarital relationship (34 %), social (58%) and financial (30%) issues.
Conclusions: • Significantly higher number of males had presence of adjustment disorder. • Statistically significant higher occurrence of adjustment disorder was seen in those married for less than 4 years, with age at marriage below 25 years and whose marriage was not accepted by family and those who reported a history of domestic violence. • The mean total BPRS and score for guilt & tension were also found significantly higher in the adjustment disorder group. • So, coping skills should be actively looked in in the patients who show signs of adjustment disorder as well as those who have attempted suicide, this will help in planning therapy for them to reduce further morbidity.

Keywords: Adjustment disorder, Suicide attempt, Marital issues, BPRS score

SURPLUS SWEATING AND SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIS): AN UNTAPPED SOLUTION

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Background: Primary hyperhidrosis is excessive, visible sweating, not associated with the homeostatic response to maintain body temperature. Untreated, hyperhidrosis causes nail infections, warts and heat rash. This case report explores the use of oral escitalopram in management.
Case Report: A 19-year old female presented to psychiatry OPD with complaints of symmetric sweating over bilateral hands and armpits, increasing progressively since the past 5 years The patient had been unsuccessfully treated by dermatologists with non-invasive therapies. She refused invasive treatment modalities. Since 1 year, she began experiencing intrusive, uncontrollable anxiety over her symptoms and was subsequently referred to psychiatry department. On examination, extremities were cool to touch. Other examinations were unremarkable. Hyperhidrosis Disease Severity Scale (HDSS) score was 4. Baseline investigations were normal. After differentials were ruled out, a diagnosis of primary hyperhidrosis and generalized anxiety disorder was made. She was started on tablet escitalopram 20 mg and maintained for 3 months. Besides anxiety, gradually, even her hyperhidrosis improved. Escitalopram was tapered off. There was no relapse.
Conclusions: SSRIs are the first line treatment for generalized anxiety disorder. They primarily inhibit serotonin transporter in the brain increasing serotonin concentration in the synaptic cleft. The fluorine halogen on aromatic ring in Escitalopram improves its specificity. As sympathetically innervated eccrine glands are hyper functional in primary hyperhidrosis, modulation of these central pathways by SSRIs may cause decreased sweating. However, the exact mechanism requires research. The use of escitalopram and SSRIs in general as a long-term maintenance agent for hyperhidrosis needs further exploration.

Keywords: Escitalopram, Hyperhidrosis, Selective Serotonin Reuptake Inhibitors

CHOREOATHETOID MOVEMENTS EVEN WITH OLANZAPINE: TARDIVE TERROR NECESSITATES CONSTANT MONITORING

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Background: Atypical antipsychotics are used in schizophrenia to avoid extrapyramidal effects due to dopamine receptor hypersensitivity in nigrostriatal dopamine pathway after long-term medication which causes denervation hypersensitivity. Though olanzapine has been reported to cause some tardive movements, it has never been known to induce non-rhythmic choreoathetoid movements, that too in an adolescent within short periods of consumption.
Case Report: A 17-year-old right-handed female patient, known case of schizophrenia since 2 years and maintained on olanzapine 20 mg presented with involuntary bilateral movements generalized over her entire body since the past 4 months, in the form of twisting movements of distal parts of hands and legs. The patient had a score of 12 on the Abnormal Involuntary Movement Scale (AIMS) scale at baseline, with severe movements in the extremities and perioral region. Her systemic examination was uneventful. Huntington's disease, Wilson's disease and similar inherited neurological disorders were ruled out by investigations. A diagnosis of olanzapine induced choreoathetoid movements was made after excluding other causes. Olanzapine was tapered and stopped. Gradually, she was shifted to clozapine and her AIMS score improved. She has been maintained on clozapine 100 mg and after 12 months of follow-ups, there has been no relapse of any involuntary movements.
Conclusions: Due to striatal dopaminergic-cholinergic imbalance and paradoxically increased nigrostriatal dopaminergic activity as a compensatory response to dopamine receptor blockade, olanzapine may cause choreoathetoid movements. Early detection of movement disorders is necessary as delayed diagnosis ruins prognosis. Thus, constant monitoring, particularly in patients with risk factors, is necessary.

Keywords: Olanzapine, Choreoathetosis, Antipsychotic Agents, Schizophrenia

SHOCKED TO WELLNESS: NEUROLEPTIC-INDUCED TARDIVE DYSTONIA NEEDING ELECTROCONVULSIVE THERAPY

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Background: Tardive dystonia involves sustained muscle contractions causing twisting movements and abnormal postures. We present a refractory case of neuroleptic induced tardive dystonia, treated with oral baclofen and electroconvulsive therapy (ECT).
Case Report: A 29 year-old female, well maintained on olanzapine for schizophrenia since past 10 years, developed tardive dystonia in past 9 months. She had been treated unsuccessfully by a neurologist with oral clozapine, trihexyphenidyl, tetrabenazine and botulinum toxin injections. On examination, she had involuntary contraction of left sternocleidomastoid and right torticollis. Other examinations were normal. Investigations ruled out alternate causes. A diagnosis of schizophrenia with tardive dystonia was made. On admission, all baseline investigations were normal. Clozapine 100 mg was continued. Baclofen 30 mg was started and increased to 120 mg in two weeks. Though symptoms improved, dystonia was still debilitating for the patient and a course of 12 ECTs were given. Dystonic movements improved steadily. Patient was maintained for 6 months after ECTs on clozapine 100 mg and baclofen 90 mg. There has been no relapse after 1 year of follow-ups.
Conclusions: ECT enhances dopaminergic transmission. It prevents super sensitization of the postsynaptic dopamine receptors which contribute to the development of tardive states. ECT causes blood–brain barrier disruption, allowing increased levels of antipsychotics to enter the brain, alleviating motor symptoms with constant oral dose of the drug. Baclofen is a presynaptic GABA receptor agonist used to treat spasticity. It’s mechanism of action in dystonia treatment needs exploration. Research is needed to refine tardive dystonia management guidelines.

Keywords: Tardive dystonia, Electroconvulsive therapy, Schizophrenia

STRESS LEVEL OF HEALTHCARE PROFESSIONALS IN LITHUANIA: WHAT FACTORS COULD BE INFLUENCING IT?

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Introduction: Members of medical community regularly experience high levels of psychological stress and tension in their workplace. They have to deal with patient deaths, lack of skills and knowledge, insufficient work conditions. Studies show that one-third of physicians have experienced burnout at certain points throughout their careers and male physicians are 70% more likely to commit suicide compared to general population. In this pilot study stress level of doctors in Lithuania was evaluated. Moreover it was analised how the stress level differs depending on sex, age, branch of medicine (therapeutic, surgical) and persons ability to classify and express feelings (tendency for alexithymia).
Methods: The research data were gathered using self-rating questionnaires. 257 healthcare professionals filled out the questionnaire. Participants were asked to evaluate their stress level on a scale from 1 to 10. Additionally questions from Toronto Alexithymia Scale (TAS-20) were used to evaluate persons ability to express his feelings. Total scores were organized into two categories: a score of 52 and more indicated alexithymia or tendency for alexithymia (difficulty expressing and classifying feelings) and a score of 51 and less indicated no alexithymia. Data was processed using R Commander.
Results: Average stress level of healthcare professionals in Lithuania was 6,83. No significant differences between different genders, age groups, branches of medicine were found ($p>0,05$). However statistically significant difference of stress levels was found when compared by alexithymia categories. Alexithymic doctors had higher average stress level (7,81) compared to non-alexithymic ones (6,55).
Conclusions: Healthcare professionals in Lithuania experience higher than average level of stress. Person's tendency for alexithymia could lead to higher level of stress. Further research of other factors that could determine higher level of stress is needed.

Keywords: Stress, doctors, healthcare professionals, burnout, alexithymia

THE CASE OF CANNABIS-INDUCED DEPERSONALIZATION-DEREALIZATION DISORDER.

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Background: Depersonalization-derealization disorder is classified as a dissociative disorder (ICD-11) in which the feeling of detachment from oneself or the surroundings, or the unreality of surroundings are predominate. DPDR can be induced by severe stress, traumatic experiences or drugs. Little is known about cannabis-induced DPDR.
Case Report: A 22-year-old man presented to the outpatient Psychiatry Ward with a history of unsuccessful treatment of depersonalization. The patient reported smoking marihuana in February 2019 for the fourth time in his life. Immediately after, he had experienced the feeling of detachment from his consciousness and emotions, concentration decrease, dizziness and energy depletion. He presented to the therapist who referred him to a Psychiatric Clinic where he was under observation for a week. The patient was suspected to experience psychotic depersonalization and was administered risperidone, which did not bring the expected improvement. After a few months, he discontinued risperidone. The symptoms, however, persisted. In February 2020 he presented to Outpatient Psychiatry Clinic and was diagnosed with cannabis-induced DDR. He was given aripiprazole, which did not bring improvement and methylphenidate (20mg/day), which brought improvement only for 1-2 hours after administration and was finally discontinued. Finally, the patient presented to our Psychiatry Ward and DPDR diagnosis was confirmed. He is now taking fluoxetine 45 mg/day and lamotrigine 100 mg/day. Depersonalization symptoms persist, however, the patient reports improvement.
Conclusions: Cannabis use may induce persistent symptoms of depersonalization and derealization. The combination of SSRI and lamotrigine could potentially bring an improvement, however, more research is needed.

Keywords: cannabis, depersonalization, derealization

16 YEARS OLD PATIENT WITH BIPOLAR DISORDERS - A CASE REPORT

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Background: Bipolar disorder is a type of mental illness which affects more than 1% of the world population and often occurs during young age. This chronic condition cause disability in young and working-age people lives.
Case Report: 16 years old patient with bipolar disorders and 6 hospitalizations in medical history was admitted to Psychiatric Clinic after unsuccessful sucide attempt by overdosing opioid drugs. In the moment of admission patient had suicidal thoughts and was in psychomotor retardation. The interview revealed 3 suicidal attempts in the past. First hospitalization took place in April of 2016 due to self-mutilation. Patient was diagnosed as other behavioral disorders and has been discharged after treatment. Bipolar disorder has been diagnosed during fourth hospitalization in April of 2019 after third suicide attempt. After treatment patient claims to has no longer suicidal thoughts and now he stays in outpatient care with visits scheduled for every month.
Conclusions: Bipolar disorder is a complex and heterogeneous psychiatric illness. Early-onset disorder is associated with long-term outcomes such as increased comorbidity. That is why individual psychopharmacology treatment with adjunctive family and individual psychotherapy is necessery from the moment of diagnosis.

Keywords: bipolar, disorder

Public Health

PRESSION OR PASSION? STUDY ADDICTION AMONGST MEDICAL UNIVERSITY STUDENTS

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Introduction: Nowadays, the development of science, technology and focusing on self-improvement force the society to gain more and more knowledge. Increasing the pression to acquire the best learning outcomes and distinguish oneself amongst the academic society is expecially present on medical universities. It may lead to study addiction, which is the educational equivalent of workaholism. The aim of study was to estimate the incidence of study addictions amongst II year students of medical courses at the Medical University of Silesia in Katowice.
Methods: A two-piece, anonymous survey was used to carry out the research. The first, obligatory part consisted of general questions (age, gender, place of living etc.) while the second one was dedicated to the polish adaptation of the Bergen Study Addiction Scale by Paweł Atroszko.
Results: Amongst 619 surveyed students, 139 declared excessive involvement in the study process by completing the specific part of the questionnaire. In this group women constituted 82,73% and men 17,27% while the avarage age of the respondents was 20,55 +/- 2,82 years. The average score was 20,65 +/- 6,66 points. The highest results were obtained by medical students, while the lowest by those studying obstetrics.
Conclusions: No statistically significant correlation was found between gender, marital status, orientation or source of income and learning addiction. Nevertheless, the collected data shows how many students are affected by this problem. The results may help to singularise groups of study addicted students, launch anti-addictional prophylaxis and therapeutic movements to reduce the negative effects of this phenomenon.

Keywords: study addiction, epidemiology, important problem, addiction, survey

THE WORLD AT YOUR FINGERTIPS- INCREASING INTERNET ADDICIONS AMONGST STUDENTS

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Introduction: The increasing number of people declaring symptoms of behavioral addictions indicates that the problem needs closer consideration. Behavioral addictions are commonly found and tolerated in our society and the Internet addiction is very sensitive case. Excesive use of the Internet can lead not only to physical and emotional problems but also to a worsening of the quality of real-life human interactions. The border between a healthy and exploiting use can often be blurred due to the difficult identification of the problem. Aim of the study was to explore the problem of Internet addiction among II grade studets of medical degrees in Silesian Medical University.
Methods: A two-piece, anonymous survey was used to hold the research. The first, obligatory part consisted of general questions (age, gender, place of living etc.) while the second one was dedicated to Problematic Internet Use Tests, adaptation of the Internet Addiction test by K.Young, filled out by those who subjectively asessed themselves as potentially at risk of addiction. The analysed group consisted of 619 students. Data from both parts of survey were compared and analysed with Statistica 13.0.
Results: The Problematic Internet Use Test (TPU) was filled by 205 respondents (33,12%). Average age was 20,81 +/- 1,20; for women (N=168) 20,76 +/- 1,12 and 20,97 +/- 1,54 for men (N=37). 13,69% of women and 24,32% of man obtained results indicating high risk of problematic use of the Internet in the future.
Conclusions: The survey did not show any correlations between any of the studied factors and the problematic use of the Internet among respondents. There is no visible risk group, however, this indicates that everyone can become a potential victim. High percentage numbers show how imprtant the problem is and that it is essential to take it into serious consideration.

Keywords: internet addiction, survey, experimental paper, addiction, important problem

IMPORTANCE OF METAPHYLAXIS IN PATIENTS WITH UROLITHIASIS DISEASE

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Introduction: Metaphylaxis – complex measures against post-treatment relapses. These measures include correction of social hygienic, medical biological and clinical factors that influence development of relapses.
Methods: The study covered 137 patients of the Urology Department of Lugansk Regional Hospital, 84 (61,3%) of them were women and 53 (38,7%) men. All patients had urolithiasis diagnosed. 63.8% of the patients had urolithiasis diagnosed for the first time while the rest 36.2% were admitted with relapsed disease. All patients admitted passed routine urological tests. We designed a questionnaire, which included 42 questions split into 3 sections as follows: social hygienic factors (age, sex, occupation, nutrition, water consumption, etc.); medical biological factors (previous treatment, hospitalization terms, concomitant urological diseases, etc.); clinical factors (past history, ultrasound and X-ray tests data, treatment methods, complications, etc.).
Results: Analysis of correlation between number of urolithiasis relapses and social hygienic factors showed that most significant influence belongs to alcohol abuse, low water consumption, hypodynamia and drugs intake. Medical biological factors included conservative treatment, chronic pyelonephritis, endocrine pathologies, incomplete stone removal and urolithiasis in rela-tives. Clinical factors were moderate or severe pain, inflammation, salts sedimentation, urine protein, and a stone in the lower portion of ureter or in the right kidney. Individual prognosis al-lowed to estimate the risks of urolithiasis relapse, which was taken into account for metaphylaxis measures employment.
Conclusions: Implementation of metaphylaxis measures of the urolithiasis disease can reduce the risk of relapse from 36.2% to 12.4%.

Keywords: Urolithiasis,metaphylaxis,treatment

REHABILITATION FOR CONGENITAL ANOMALIES OF THE MUSCULOSKELETAL SYSTEM IN CHILDREN. MUSCLE SPIRALS. PHYSICAL AND MATHEMATICAL JUSTIFICATIONS. POLISH AND UKRAINIAN EXPERIENCE.

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Background: According to statistics, congenital pathology of the musculoskeletal system in children in Europe is consistently high in recent years. Surgical treatment and rehabilitation according to the standards of the International Qualification of Functioning allow sick children to socialize in society.
Case Report: A 11 years-female with diagnosis: congenital anomaly of the left lower extremity, tibial prolapse, shortening of the shinbone by 40%. Congenital complex anomaly of the hands: syndactyly and oligodactyly. At the age of 9 months foot was corrected along the vertical axis; 11 months stabilization of the left knee joint; 3 years for the 1st time bone elongation by 50 millimeters, its triple dissection, using device of external fixation; 2nd lengthening 60 millimeters by the same method at 6 years; 3rd at 10 years, 65 millimeters. After the third operation developed flexion contracture in the knee joint, presence of impeachment syndrome. The extension angle was 45 degrees.
Conclusions: We have proposed a one-step combined effect on the pathogenic muscle spiral and the muscle spiral antagonist; manual release of the thoracic-abdominal diaphragm in preparation for the treatment of joint contracture; thoracic-abdominal diaphragm we consider as an internal extension of the external muscular spirals of the human body. To prevent trauma of the knee joint during the contracture treatment, the vector of physical impact was applied not perpendicular to the levers of the knee joint (thigh and lower leg) but in the longitudinal direction to them. So, the moment of force is zero, the load on the knee joint is minimal.

Keywords: thoracic-abdominal diaphragm, tibial prolapse, knee joint, muscle spiral, the moment of force.

BODY IMAGE OF SENIOR PEOPLE: SELF-EVALUATION OF FACIAL AND BODY PARTS IN RELATION TO BIOLOGICAL AND SOCIAL FACTORS

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Introduction: Seniors' body image is not sufficiently researched, there are very few articles on this topic.
Methods: Seniors aged 64-99 (77±8) were investigated at 12 institutions (hospices, choirs) in 2019. Respondents evaluated their 10 body, 11 face parts in a 5 point Licert scale. Points of body, face parts were separately summed, arithmetic mean was derived. Statistical analysis was performed using MS Excel, R Commander. The statistical significance between data - $p < 0.05$.
Results: Only 69% (163/236) seniors agreed to answer questions about their body image. The main refusal causes were: religious beliefs, questions seemed meaningless, inability to evaluate themselves. Higher scores of body evaluation (BE) were given by seniors under 76 years of age 3.6±0.8 ($p < 0.05$). BE of moderately physically active seniors was higher (3.6±0.7), also by seniors, who lived in their own residence ($p < 0.05$). Higher scores of face evaluation (FE) were given by seniors under 81 years of age: 64-70 years – 3.6±0.9; 71-75 years – 3.6±0.9; 76-80 years – 3.3±0,6; 81-85 years – 3.4±0.7; 86-90 years – 3.2±1; 91-95 years – 3.2±0.6 ($p < 0.05$); also by people with higher physical activity (3.6±0.8), active leisure time (3.5±0.8), living in their own apartment (3.7±0.8) ($p < 0.05$).
Conclusions: One third of seniors rejected to evaluate their body image because of religious beliefs, opinion that questions are meaningless. Seniors under age of 76 evaluated their body, face parts better. Higher scores were given by seniors, who live in their own apartment, were moderately or highly physically active.

Keywords: elderly people, body image

NITRIC OXIDE LEVELS IN TEAR AND SERUM OF PATIENTS WITH HYPERTENSIVE RETINOPATHY

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Introduction: Hypertensive retinopathy (HR) is a multifaceted disorder, whose pathological molecular mechanism is uncertain. Augmented blood pressure can not fully explain the retinal alterations that occur, in consequence supplementary pathogenetic mechanisms, such as oxidative/nitrosative stress could be associated. The aim was to evaluate serum and tear nitric oxide (NO) levels and to determine whether there is a correlation between them and HR degree.
Methods: 90 patients identified primarily with HR, divided according to the Keith-Wagener classification into GI – 36 patients with grade I HR, GII – 35 with grade II and GIII – 19 with grade III. NO level was determined according to Meteliskaia V. in the modification of Gudumac V. et al. and expressed as M±DS. ANOVA was used, followed by the Bonferroni post hoc test and $p<0.05$ being statistically significant.
Results: In serum was determined a tendency for NO level to increase in the IInd group, followed by a noticeable diminution in the IIIrd. In the tear, the NO level did not change statistically but presented a gradual decrease as HR advanced. Tear and serum NO levels did not correlate with HR degree ($p=0.056/p=0.341$), but correlate with low power with each other ($r=0.262$, $p=0.013$). It was thus concluded that NO bioavailability was reduced in the tear in the presence of ROS leading to a series of retinal vascular changes seen in HR.
Conclusions: The HR advancement is not correlated with either increased NO serum or diminished tear level. Therefore, further studies are needed to resume the role of the oxidative/nitrosative stress in HR evolution.

Keywords: nitric oxide, oxidative stress, hypertensive retinopathy

TEMPERAMENTAL CONDITIONING AND CONTROL OF EMOTIONS IN RELATION TO BODY MASS

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Introduction: Obesity has a negative impact on physical and mental state. Undoubtedly we know much more about its influence on somatic health than on psyche, despite the fact that both of them play an equally vital role in the quality of life. The aim of the study was to assess temperamental conditioning and control of emotions in relation to nutritional status.
Methods: One hundred and seventy-one subjects (including 112 women) were included in this study. The rate of their emotions and temper were assessed using the EAS scale (assessing fear and anger, activity, and sociability) and Courtauld Emotional Control Scale (CECS, assessing subjective control of anger, anxiety and depression in difficult situations).
Results: In all study groups a negative correlation between the level of activity assessed by EAS scale and body mass ($r= -0.17$, $p<0.05$) was found. In addition, in normal weight and overweight but not in obese group we observed a positive correlation between overall emotion control rate and level of fear among ($r=0.88$, $p<0.05$ and $r=0.38$, $p<0.05$; respectively).
Conclusions: Body mass is the factor decreasing activity but not influencing anger and sociability. Fear significantly influences emotion control in normal weight and overweight but not in obese subjects.

Keywords: temperamental conditioning, emotion control, nutritional status

PREVALENCE OF PSYCHOACTIVE SUBSTANCES USAGE AMONG YOUNG PEOPLE FROM MAŁOPOLSKA

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Introduction: Assessment of the prevalence of psychoactive substances usage among young people is important to plan, implement and evaluate of public health interventions. The aim of the study is to analyze questionnaire regarding various psychoactive substances usage of Polish teenagers.
Methods: Students attending primary and junior high schools in Małopolska were enrolled into the study. The questionnaire enquiring about intake of alcohol, tobacco and drugs was conducted.
Results: The study involved 3778 students (50% females). Mean age equaled 14.1±0.7 years. The most common substance declared by both sexes was alcohol (35.81% had drunk it at least once). The popularity of the alcohol was higher among boys (39.01% boys vs 32.60% girls, $p<0.001$) and town dwellers (39.29% towns vs 33.30% villages, $p<0.001$). The second most popular substance was tobacco in the form of cigarettes (20.84% had smoked at least once). In comparison of places, the cigarettes were more prevalent among residents of towns (towns 24.52% vs 18.17% villages, $p<0.001$). Drugs were the least popular psychoactive substances among teenagers (3.36% had taken them at least once). Their intake was higher among boys than girls (3.99% vs 2.72%, $p=0.03$). Furthermore, drug usage was statistically significantly higher among residents of towns compared to residents of villages (4.63% vs 2.44%, $p<0.001$).
Conclusions: Boys are more prone to take each type of harmful substances than girls. It may by one of the many factors that predispose males to develop cardiovascular as well as pulmonary diseases more often than females.

Keywords: psychoactive substances, teenagers, survey

WILLINGNESS TO PARTICIPATE IN THE HPV VACCINATION PROGRAM OFFERED BY WARSAW CITY HALL - CROSS SECTIONAL SURVEY AMONG PARENTS

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Introduction: Cervical cancer (CC) is a significant problem of oncoginecology. Poland distinguishes itself by the higher mortality rate due to CC among other EU countries which comes from late diagnosis and poor vaccination rate of human papilloma virus, HPV. HPV vaccinations that should be performed before the onset of sexual initiation are a valued method reducing cervical cancer risk. Unfortunately, we find availability of such vaccinations difficult in Poland due to lack of financing in Protective Vaccination Program (Program Szczepień Ochronnych) which is only partially covered by preventive local governmental programs. This year, introduction of publicly financed preventive HPV vaccinations for children aged 10-11 has been planned by the Warsaw City Hall. The aim of the study was to assess readiness of Parents' of children aged 10-11 to participate in publicly funded HPV vaccination program, along with identification of key factors influencing positive or negative decision.
Methods: The original questionnaire consisted of 12 questions. It was distributed by a popular Polish electronic grade book platform - LIBRUS, through the period of April-June 2019, among Warsaw Primary Schools, those participating in the study were randomly selected, taking into account the representation of each district of Warsaw.
Results: In the study, data of 402 respondents (92% women, average age 46.4) has been gathered. 53% of them haven't heard of publicly funded HPV Vaccination Program being planned and as much as 50% haven't known that boys can undergo this vaccination as well. 81.2% of the respondents declared willingness to participate in the project. Among reasons of refusal to participate parents indicated: fear of complications associated with the vaccination (91%), lack of faith in the effectiveness of vaccination (54.4%) and belief that the issue of cervical cancer doesn't concern their child (24%).
Conclusions: Attitude to the publicly funded HPV Vaccination Program in the study group is positive. Most of the respondents declare willingness for their children to take part in the program. 79.5% is willing to obtain more information on the subject when 80.2% consider the subject significant and think that this topic should be raised at school. Unfortunately, despite the favorable attitude of Parents, HPV vaccinations are difficult to obtain in Poland due to their high demand worldwide which aggravates the problem.

Keywords: HPV, cervical cancer, vaccination program, STD, prophylaxis, prevention

THE POWER OF KNOWLEDGE. HPV VACCINATION IN POLAND.

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Introduction: Cervical cancer is the seventh most common malignant cancer in Poland. To counter this situation, some cities across Poland decided to provide its citizens with a prophylactic HPV vaccination programme.The objective of this study is to determine the knowledge and awareness about HPV vaccination among Polish women in correlation with the access to refunded prophylactic programs in their hometowns.
Methods: The anonymous survey consisting of 28 questions was conducted among 2059 women from all over Poland. The questionnaire regarding their age, education, place of residence, knowledge about HPV vaccination and prophylactic programmes was available via Internet and was also distributed to mothers in few primary schools in Warsaw.
Results: Among 2059 respondents, 54% of whom have heard about the HPV vaccination (86%) knew about the existence of free prophylactic programs. Among this group 62% did not know their city is holding such initiative. 81% of women would vaccinate if the programme was introduced and 94,9% responders thought that children should learn more on the topic in school.
Conclusions: The study has found that the knowledge about the HPV vaccination is relatively high in Poland. Nevertheless, the awareness of prophylactic vaccination programmes is lower and significantly differs depending on the age group as well as the city's health policy. Fully and partially refunded prophylactic HPV vaccination programmes are undoubtedly a step in the right direction, being at the same time the one that should be followed by some better informative campaigns dedicated to citizens by both the city and the general practitioners.

Keywords: HPV, cancer, vaccination

EVALUATION OF THE EFFECTS OF MSC ADMINISTRATION ON THE TRANSCRIPTOMIC PROFILING OF THE LUNG

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Introduction: Mesenchymal stem cells (MSCs) are recognized as candidates for cellular therapy. In fact, considering their regenerative potential, immune regulatory properties and low immunogenicity, MSC represent a promising option in treating various inflammatory and degenerative diseases, including respiratory diseases. Although therapeutic potential of MSCs in experimental models of respiratory diseases has been evaluated, to date, the effects of MSC administration on the normal lungs remain elusive. Here, we aimed to analyze changes in transcriptomic profiles of the lung after MSC administration.
Methods: Human adipose tissue derived MSCs were administrated intranasaly to C57BL/6 mice, 24h (early effect) and 7 days (prolonged effects) before experiment termination. Histochemical stainings were performed to assess lung physiology. Next-generation sequencing (NGS) of lung mRNA was perfoemd. The data were analyzed with R (R Core Team) and Ingenuity Pathway Analysis (IPA) software (QIAGEN).
Results: Suprisingly, we observed significant changes in the lung transcriptomic profiles after MSC administration. More importantly, both early and prolonged effects of MSC administration were associated with distinct gene signatures. In fact, we found 1467 differentially regulated genes. More precisely, 593 genes were up-regulated, and 874 were down-regulated, while 47 up- and 54 down-regulated genes were common for both models. Finaly, we found differences in canonical and non-canonical pathways associated with the MSC early and prolonged effects on the lungs.
Conclusions: In conclusion, we showed the early and prolonged effects of MSC on the lower airways. However, further studies are needed to understand sustained effects of MSC administration on the lung phisiology.

Keywords: transcriptomics, asthma, mesenchymal stem cells

Radiology and Nuclear Medicine

CONGENITAL BRAIN DEFECTS IN PEDIATRIC PATIENTS

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Introduction: Malformations of the central nervous system are among the most serious diseases of the nervous system. Congenital brain defects in children are diagnosed in 2-4 % of newborns. In case of any congenital brain disease suspicion, patients are usually referred to head MRI scan. Aim of the study is to assess the usefulness of MR examination in the diagnosis of CNS and in qualification for possible neurosurgical treatment in pediatric patients with neurological symptoms.
Methods: The study included a group of 17 children aged 10 months to 16 years referred to the magnetic resonance imaging (MRI) for brain evaluation due to the presence of neurological clinical symptoms suggesting congenital brain defects.
Results: In MRI examination agenesis of the corpus callosum were found in 4 children, one with coexisting widening of the cerebellospinal fluid space and one with the presence of a 21 x 37 x 6 mm lipoma in this location. In 5 patients examination revealed hypoplasia of the corpus callosum, in 1 agenesis of septum pellucidum and in 1 septo-ocular dysplasia. Additionally, 3 children were diagnosed with Arnold-Chari malformation and 2 with Dandy-Walker syndrome. One patient turned out to have corpus callosum lipoma. Based on the results of MR 5 children were qualified for neurosurgery treatment.
Conclusions: Magnetic resonance imaging is the method of choice in evaluation of congenital brain defects. As a non-invasive and safe examination, it is useful not only in diagnosis, but for qualification for neurosurgery treatment and monitoring especially of pediatric patients.

Keywords: CNS malformations, magnetic resonance, congenital brain defects

STAGE BIFURCATION STENTING OF SUBTOTAL STENOSIS OF INFERIOR VENA CAVA

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Background: Chronic obstructive diseases of the inferior vena cava (IVC) can be complicated by the development of IVC syndrome. Open IVC surgeries are rarely used, as they're technically complex. Endovascular methods of treatment are considered promising.
Case Report: Patient, 48 years old. For six months, she made complaints about pelvic pain. 25.01.2019 patient underwent multislice computed tomography (MSCT). Subtotal stenosis of the infrarenal IVC was revealed. She was hospitalized in the Clinical Hospital No.1 of the Presidential Administration. Balloon angioplasty of IVC by "Atlas" catheter 18x60mm, both CIV(common iliac veins) by "kissing" technique by 12x60mm catheters before and after stenting. 18x100mm "Venovo" stent 5 mm higher than bifurcation was implanted in the infrarenal IVC part. Intravascular ultrasound (IU): in IVC the stent is disclosed throughout. Narrows of both CIV are marked. It was decided to perform bifurcation stenting of both CIV with access to IVC. On the next phlebography and IU: the right ovarian vein decreased in diameter from 15 to 7 mm, a perfect blood outflow from both kidneys was noticed. Two 14x100mm "Venovo" stents were implanted. Angioplasty of both CIV was performed; IVC by "kissing" technique was performed. On phlebography and IU - stents are passable. After 2 days, the patient was discharged; rivaroxaban was prescribed at a dose of 20mg/day.
Conclusions: Endovascular interventions in combination with intraoperative intravascular ultrasound are an effective technique for restoring blood flow during occlusion of the inferior vena cava. Safety of stenting of IVC with overlapping of opening of renal veins is confirmed.

Keywords: subtotal stenosis of the inferior vena cava, venous stenting, stenting of the inferior vena cava, stenting of iliac veins, intravascular ultrasound.

PATIENTS WITH NEGATIVE STRESS-TEST – WHAT CAN ECG-GATED MDCT REVEAL ABOUT THEM?

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Introduction: Cardiac stress test is a non-invasive diagnostic examination used in patients with symptoms of coronary artery disease before making a decision about further therapeutic management. The positive test result has been one of the main indications for coronary angiography so far. In recent years, it is increasingly common for the invasive coronary artery assessment method to be replaced by ECG-gated multi-row computed tomography (ECG-gated MDCT). The aim of the study was to analyze the lesions found in ECG-gated MDCT in patients with a negative stress test result and to assess the significance of using ECG-gated MDCT in such cases.
Methods: ECG-gated MDCT results of 677 patients (322 women, 355 men, aged 11-81, mean 57.2 ± 11.5) with symptoms of stable coronary artery disease and a negative stress test result, referred to the I Department of Medical Radiology of Medical University of Lublin in 2015-2019, were analyzed. Patients were examined using the 256-row GE Revolution CT system and 64-row tomograph Light Speed VCT by the method of plain scanning with 0.6 mm collimation and after intravenous administration of a contrast agent. The analysis included the assessment of atherosclerotic coronary lesions based on a 0-4 scale referring to typical coronary angiography lesion classification, the evaluation of anatomical variants of coronary arteries, in particular the recessive arteries as well as the occurrence of muscular bridges. Agatston CAC score was also considered.
Results: Atherosclerosis of the coronary arteries was found in 568 subjects (83.9% of the group), i.e. 252 women (37.2%) and 316 men (46.7%). Significant stenosis was found in 182 subjects (26.9%), including 9.6% women, 17.3% men, $p = 0.000$ – a statistically significant difference, (LAD 122 cases, RCA 68 cases, LM 4 cases, LCx and OM 60 cases and Dia 45 cases). Among 386 patients the largest stenosis was mural lesions. In 109 patients, no coronary artery stenosis was reported. Among patients with coronary calcification, the mean Agatston CAC Score was 299, median – 105.
Conclusions: Atherosclerotic lesions in coronary arteries occur in the majority of patients referred for cardiac CT due to the presence of coronary pain with a negative stress test result. Significant coronary stenosis is detected in more than 25% of subjects, with higher prevalence in men in this group compared to women. ECG-gated CT in most patients with a negative stress test result and without significant coronary artery stenosis allows the detection of lesions that may explain the clinical symptoms.

Keywords: cardiac stress-test, negative stress-test, ECG-gated MDCT

THE INFLUENCE OF SINGLE LOW DOSE OF RHTSH ON PATIENT SATISFACTION IN RADIOIODINE THERAPY OF NON-TOXIC MULTINODULAR GOITRE.

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Introduction: Radioiodine treatment (RIT) in large non-toxic multinodular goitre (MNG) is the method of choice in therapy of elderly patients with contraindications to surgery. In these cases compressive symptoms are the main indication and because of this patients satisfaction of treatment's effect is very important. Recombinant human thyrotropin (rhTSH) increases thyroid radioiodine uptake (RAIU) improving the results of RIT and shortening the time of expected effects appearance. The aim of the study was to compare patients satisfaction after radioiodine therapy of MNG with and without pre-injection of rhTSH.
Methods: 40 patients (14 male, 26 female, age 57-80 yr) with large MNG > 80 grams and with baseline RAIU < 40% were included to the study and divided into two groups. First group received the single intramuscular injection of 0,03 mg rhTSH and the second received placebo. After this, all the patients were administered the therapeutic doses of I-131 recalculated according to new RAIU. Patient satisfaction was measured with visual analogue scale (VAS) questionnaire (inclusive main compressive symptoms: dyspnea, cervical compression, dysphagia, cosmetic discomfort, max. 40 points) 6, 12 and 18 months after RIT.
Results: 12 and 18 months after RIT the mean volume goitre reduction were significantly greater in group with rhTSH than in patients with placebo (49±5,8% and 60,28±5,7% vs. 36±6,2%, 41±7,1%) ($p<0,05$). The degree of compression symptoms reduction was higher appeared significantly earlier in patients after rhTSH. In rhTSH group median VAS scores were decreased from basic 28.0 to 19.0, 15.0 and 10.0, 15.0 respectively at the 6, 12, 18 month of follow-up in comparison with the second group, in which median scores were: initial - 29.0 and 26.0, 21.0, 16.0 respectively 6, 12 and 18 months after RIT.
Conclusions: The single low dose rhTSH injection significantly increases patients satisfaction after radioiodine therapy of MNG. Moreover, pre-treatment with rhTSH reduces the therapeutic dose of 131-I and makes RIT more effective in patients with low RAIU.

Keywords: nucelar, thyroid, radioiodine, rhTSH, non-toxic, goitre

HEPATIC METASTASES IN COLORECTAL CANCER DETECTED WITH 18FDG PET/CT

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Introduction: 18FDG PET/CT is a very good method for detecting both primary and secondary neoplastic lesions, useful in patients with colorectal cancer to detect metastases to the liver and dissemination to other organs particularly before possible surgical procedures The aim of this retrospective study was to analyze frequency of metastases to the liver in colon and rectal cancer detected by 18FDG PET/CT
Methods: The 18FDG PET/CT database of the Department of Nuclear Medicine, Medical University in Lublin (January 2014 - April 2019) was analyzed for patient with pathologically proven colon and rectal cancer who were diagnosed with liver metastases
Results: 72(32%) from 224 colon cancer patients had a total of 173 liver metastases; 41(18%) of them with other organs involved. 83(28%) from 296 rectal cancer patients had a total of 118 liver metastases; 55(18%) of them had other organs involved. Solitary liver lesion was found in 36 (16%) of patients with colon cancer, including 16 (7%) cases without extrahepatic spread and in 66 (22%) of patients with rectal cancer, of which 30 (10%) without extrahepatic spread. Statistically, multiple liver lesions appeared more frequently in colon cancer ($p<0.05$). There was no difference between frequency of cases with metastatic liver foci without other neoplastic lesions in colon and rectal cancer.
Conclusions: Liver metastases are common in both colon and rectal cancers, only few cases are solitary without extrahepatic involvement. Multiple liver lesions tend to appear more frequently in colon than rectal cancer .18FDG PET/CT is useful in staging of colorectal cancer before making therapeutic decisions.

Keywords: PET-CT, colorectal cancer, hepatic metastases

THE USE OF ULTRASOUND IN THE DIAGNOSIS OF INFLAMMATORY SKIN AND SOFT TISSUE INFECTIONS.

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Introduction: Skin and soft tissue infections (SSTIs) are encountered frequently in developed societies due to the increasing prevalence of diseases such as diabetes, venous stasis, lymphedema and the increasing prevalence of resistance to antibiotics such as MRSA. Ultrasound examination (US) is a valuable diagnostic tool in the assessment of SSTIs, allowing for early detection of infection, selection of an appropriate therapeutic method (antibiotic therapy vs surgical treatment) and control of the course of treatment. The aim of the study was to discuss the usefulness of US as a diagnostic tool in SSTI, presenting the image of changes in the examination and method limitations.
Methods: A review of the scientific literature indexed in the PUBMED database from the last 10 years was carried out. The work was illustrated by US examinations from the 1st Department of Medical Radiology, Medical University of Lublin.
Results: The use of a non-invasive US allows for the precise categorization of SSTI: differentiation of symptoms into inflammatory or non-inflammatory, identification of cellulitis and abscess, assessment of the extent of infiltration and the adjacent tissues and lymph nodes. US has been shown to be more reliable than clinical exam alone. The judicious use of US allows for more appropriate patient care and management of their underlying infection.
Conclusions: : US examination of soft tissues is a simple, inexpensive and non-invasive good method of assessing SSTI, allowing to make the right diagnostic and therapeutic decisions.

Keywords: ultrasound, skin, soft tissue, infections

EVALUATION OF THE USEFULNESS OF HIGH RESOLUTION COMPUTED TOMOGRAPHY IN IPF DIAGNOSTICS.

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Introduction: Idiopathic Pulmonary Fibrosis (IPF) is a progressive, fatal lung disease that involves the accumulation of extracellular matrix elements in interstitial space. Its etiology is unknown. The median survival rate is about 3.5 years, only 37% of patients survive 5 years. These indicators put IPF on an equal footing with cancer with the worst prognosis. The radiological and histopathological pattern of IPF is Usual Interstitial Pneumonia (UIP). Definite UIP in High Resolution Computed Tomography (HRCT) constitutes the necessary and only condition for the diagnosis. The diagnosis of likely and indeterminate UIP may require histopathological confirmation. Early diagnosis and new forms of therapy may inhibit disease progression and improve prognosis. They may also be a form of bridging therapy pending transplantation.
Methods: Material: Medical documentation, including HRCT images, of 57 patients of the 2nd Lung and Tuberculosis Clinic and the 3rd Tuberculosis and Lung Diseases Department of the University Hospital in Białystok. Methods: Retrospective evaluation of the quality of the material, involving the determination of the percentage of diagnosed definite UIP cases in relation to all patients with interstitial lung diseases.
Results: There were 6 cases of certain UIP, which represent 10.5% of all analyzed cases.
Conclusions: Although international guidelines define HRCT as the method of choice for IPF diagnosis, its usefulness depends on many factors. First of all, the role of the team's experience and intensive training to improve its preparation is stressed. Moreover, multidisciplinary consultations play a vital role. Such an approach significantly increases the probability of correct and reliable diagnosis.

Keywords: HRCT, IPF, UIP, INTERSTITIAL, LUNG, DISEASE,

SMALL INSECT AND SEVERE PROBLEMS. THE ROLE OF MAGNETIC RESONANCE IMAGING (MRI) IN EVALUATION OF PATHOLOGIES OF THE HIP JOINT AND THIGH AREA.

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Background: The insect bite reaction depends on many factors such as individual patients predispositions (especially allergies), insect species, the number of simultaneous bites etc. The reaction may occur as skin erythema, pruritic papules, wheals, extensive oedema or even anaphylactic shock. The symptoms may occur in very unspecific way, hence in certain cases advanced diagnostic methods are needed.
Case Report: A 59- year- old woman with a recent history of an insect bite was admitted to the hospital due to severe pain of the proximal left thigh. A palpable, painful mass within soft tissues of the abovementioned area with no visible signs of skin involvement was found during physical examination. Contrast-enhanced MRI was performed based upon high degree clinical suspicion of hip joint pathology, like neoplastic lesion. MRI depicted extensive oedema within anteromedial part of the left thigh, with the involvement of both subcutaneous tissue and muscles (including left iliacus, pectineus, sartorius and rectus femoris muscles). Changes also involved the area of attachments of the left vastus muscles. Additionally, MRI revealed reactive superficial inguinal lymph nodes with short-axis diameter of up to 8 mm, and external iliac lymph nodes with short-axis diameter of up to 17 mm. Data obtained during MRI suggested massive inflammatory infiltration of the soft tissue in anteromedial part of left thigh, without significant pathologies of the hip joint.
Conclusions: Magnetic resonance imaging unambiguously defines location and character of the pathological lesions of the thigh and hip joint area. MRI allows for initial differentiation of neoplastic and non-neoplastic lesions, especially inflammatory ones.

Keywords: insect bite, magnetic resonance imaging, soft tissue oedema, hip joint area, thigh area

THE ROLE OF USG DOPPLER AND ANGIO MR IN OBSERVING THE DEVELOPMENT OF SLE

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Background: Systemic lupus erythematosus is a multi-organ autoimmune disease that arises from the background of immune system disorders and the production of autoantibodies which cause chronic inflammation. The disease picture is heterogeneous and lesions can affect every organ and tissue. Therefore, the diagnosis of SLE is based on a constellation of many differential examinations.
Case Report: A 41-year-old woman, who was hospitalized for SLE, suffered from headaches and neck pain therefore she was ordered a series of tests. Doppler USG detected a thickening of the wall of the right vertebral artery in sections V1 and V2. AngioMR also showed that the thickening is asymmetrical - from 2.5mm proximal to 4.5mm distal with segmental contrast enhancement. Additionally, the angioMR 3D TOF images indicated a narrowing of the lumen of this artery in the V2 segment with a slight widening in the V3. The intramural hematoma wasn't found but contrast enhancement of the non-thickened wall of the left vertebral artery at the level of C3 was observed.
Conclusions: SLE's incredibly diverse clinical picture. Many changes can be difficult to detect because of their location, periods of remission and exacerbation. One of the less common pathologies is vascular inflammation which gives non-specific symptoms. MR shows fragments of the vessel that aren't available in intracranial USG, but for detecting changes in the cervical part of the vertebral arteries more useful is USG Doppler. That's why the use of USG Doppler and angioMR in the detection of changes within the vessels, e.g. those responsible for the proper blood supply to the brain structures, is so crucial.

Keywords: SLE, systemic lupus erythematosus, USG Doppler, Doppler, angioMR

THE ROLE OF ULTRASOUND EXAMINATION IN THE ASSESSMENT OF CAROTID ARTERY PATENCY.

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Introduction: Stroke is the third most common cause of death. We can distinguish between ischemic (85-90%) and hemorrhagic strokes (10-15%). More than 40% of ischemic strokes are caused by narrowing or obstruction of extracranial intracerebral arteries. The cause of 90% of carotid stenosis are atherosclerotic changes which are most often located in the bifurcation of the common carotid artery and in the initial segment of the internal carotid artery. The aim of study is to evaluate the effectiveness of ultrasound examination in the assessment of carotid artery patency.
Methods: The study included a group of 56 patients aged 35-86, referred to the Department of Interventional Radiology and Neuroradiology for ultrasound examination of carotid arteries.
Results: In ultrasound examination, 2 patients were diagnosed with internal carotid artery occlusion, 5 patients with haemodynamically significant internal carotid stenosis. In 14 patients atherosclerotic plaques with a thickness exceeding 2.0 mm were diagnosed and in 23 patients less than 2.0 mm. 8 patients had a thickening of the intima-media complex, and the remaining 4 had normal ultrasound of the carotid arteries. All patients with diagnosed stenosis were consulted neurologically. 2 out of 5 patients diagnosed with significant stenosis of the internal carotid artery were qualified for treatment by stent implantation, 1 patient for surgical treatment.
Conclusions: Ultrasound examination is used to assess the patency of the carotid arteries. It allows for the diagnosis of obstruction or stenosis and an accurate assessment of atherosclerotic plaques in the carotid arteries. Ultrasound is the method of choice to qualify patients with carotid artery stenosis for endovascular or surgical treatment.

Keywords: ultrasound, carotid artery patency, stroke

INTERVENTRICULAR SEPTAL THICKNESS AS A DIAGNOSTIC MARKER OF FETAL MACROSOMIA

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Introduction: Serious complications in both mother and child arising as a result of fetal macrosomia indicate the need for early diagnosis and prevention. Unfortunately, current predictors such as fetal biometry, fundal height and amniotic fluid index appear to be insufficient. Therefore, we decided to assess the predictive potential of interventricular septal thickness (IVST) as measured in >=33 weeks of gestation.
Methods: 299 patients met the inclusion criteria: >=33 weeks of gestation and a complete medical history including all necessary measurements, namely IVST obtained by M-mode echocardiography, fetal biometry information and birth weight. Statistica 13.1 PL software was used to generate the receiver operating curve.
Results: 46.43% of macrosomia cases were predicted based on fetal biometry abnormalities. IVST is a promising macrosomia predictor, with an area under the curve of 0.644 (0.525-0.762; p=0.0177). Using the Youden index method, a cut-off point of 4.7mm was selected as the most optimal threshold for diagnosis, detecting up to 71.43% of cases.
Conclusions: IVST at >=4.7mm appears to have a higher sensitivity and NPV than ultrasound, which was reported both here and elsewhere.

Keywords:

ARACHNOID CYST - A TRIVIAL CAUSE OF GREAT AILMENTS

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Background: Arachnoid cysts are defined as pathological fluid reservoirs, surrounded by an arachnoid-like membrane and filled with a fluid similar to the cerebrospinal fluid. We divide cysts into primary, arising in fetal life, and secondary, arising in the post-fetal life, most often as a result of an inflammatory process or trauma. Arachnoid cysts are dynamic and rarely show clinical symptoms.
Case Report: A 25-year-old female patient with severe headaches that hindered her daily functioning was subjected to an MRI of the brain with diffusion and contrast enhancement. The study showed the widening of the fourth ventricle caused by a thin-walled arachnoid cyst with dimensions of 27 x 26 x 24 mm, which caused a mass effect in the form of modeling the structures of the brain stem. There was also a slight, generalized widening of the Virchow-Robin perivascular spaces and features of slight periventricular cerebrospinal fluid leakage. Apart from the above-mentioned cyst, no other focal lesions were found within the remaining intracranial structures.
Conclusions: Arachnoid cyst rarely requires clinical intervention. However, in this case it was the cause of severe pain in the patient. In the general population, an arachnoid cyst of the posterior cranial fossa may also manifest: impaired motor coordination and balance, impaired speech, vomiting and general weakness. The indications for surgical treatment are lesions of medium and large size that produce symptoms. The treatment methods are based on surgical methods: endoscopic removal of the cyst with a laser, craniotomy with excision of the cyst and drainage.

Keywords: arachnoid cyst, cerebrospinal fluid, magnetic resonance imaging, MRI

DIAGNOSIS AND MONITORING OF TREATMENT WITH THE USE OF CT AND MRI IN CHILDREN'S CEREBELLAR TUMOURS

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Background: Medulloblastoma is one of the most common brain tumor in children, located in the posterior fossa. Due to its high degree of malignancy, the tumor requires detailed diagnostics and implementation of an appropriate treatment. One of the therapeutic possibilities is to combine surgical treatment with radiotherapy.
Case Report: In a 6-year-old patient with headaches and nausea, head diagnosis was performed using CT and MRI scans. In the first step, a CT scan revealed a hyperdense tumor with a small fluid component in the cerebellum. The descent of the cerebellar tonsils into the foramen magna at a depth of 5-6 mm was observed. The next day a contrast-enhanced MRI was performed which showed the neoplastic lesion including the left lobe, the vermis and the left cerebellar hemisphere, the dimensions of the tumor were precisely determined (55x56x 40mm). On the basis of the applied diagnostics a decision was made on surgical treatment. The monitoring of the patient's condition after the treatment included control examinations with the use of CT and MRI. Irregular hemorrhagic lesions within the postoperative area were observed. The presence of blood was also visualized within the patient's ventricular system.
Conclusions: Modern imaging methods allow to diagnose and monitor malignant cerebellar tumors. The preliminary results obtained in the CT scan were extended by MRI. The demonstrated clinical case is a confirmation of the usefulness of both examinations, especially since the detected tumor is a frequent and dangerous lesion, which without implementation of appropriate treatment has a bad prognosis.

Keywords: medulloblastoma, radiology, pediatrics

THE EFFECTS OF FLOW-DIVERTER TREATMENT OF INTRACRANIAL ANEURYSMS.

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Introduction: Flow-diverter stents enables treatment of fusiform aneurysms and wide-neck aneurysms. The aim of the study was retrospective assessment of the results of primary treatment of intracranial aneurysms with flow-diverters during a one-year follow-up.
Methods: 31 patients (25 women, age 54 ± 9.8) with 35 aneurysms treated with flow diverters between 2014-2016. For 22 aneurysms, FRED flow-diverter (MicroVention, France) was used, in other cases PED (Medtronic, USA). Digital subtraction angiographies with 3D reconstruction carried out during the procedure and after 6 and 12 months was reviewed. Three planes aneurysm dimensions as well as aneurysm neck diameter and parent vessel diameter were measured. Aneurysm's type, location and the result of embolization were determined.
Results: 28 aneurysms were saccular, 5 fusiform and 2 dissecting. The most common location of the aneurysms was the ICA ophthalmic segment (n=18). The size of the aneurysms ranged between 2-22 mm. The median volume of aneurysm was 152 mm3 (IQR=423.45 mm3); the mean aneurysm's neck was 5.72 mm ± 2.74 and the parent vessel diameter 4.10 mm ± 0.98. Check-up after 12 months was done in 58.0% of patients. Eventually, complete obliteration of 19 aneurysms and size reduction in 12 was observed. Most aneurysms that did not fully obliterated had an initial volume between 45-350 mm3 and their volume decrease in the given period was about 35 mm3. No factors contributing to incomplete obliteration were found.
Conclusions: Flow-diverter stents are an effective method of treating intracranial aneurysms for which classical spiral embolization cannot be used.

Keywords:

TABLE OF CONTENTS

Anaesthesiology, Intensive Care and Emergency Medicine

Basic Sciences and Experimental Medicine

Cardiac Surgery and Thoracic Surgery

Dermatology

Doctoral students` session

Endocrinology and Diabetes

General Surgery

Gynaecology and Obstetrics

Head and Neck Diseases

Infectious diseases

Internal Medicine

Neurology and Neurosurgery

Orthopaedics, Physical Therapy and Rehabilitation

Paediatrics and Neonatology

Patomorphology and Forensic Medicine

Pharmacology, Genetics and Dietetics

DISEASE

Poster Session

212 ..... PECULIARITIES OF PARTIAL RENAL FUNCTIONS IN THE EARLY PERIOD OF ALLOXAN-INDUCED EXPERIMENTAL DIABETES

213 ..... GLUCOSINOLATE AND POLYPHENOL PROFILES OF NASTURTIUM OFFICINALE (WATERCRESS) MICROSHOOT CULTURES GROWN IN PLANTFORM BIOREACTORS

214 ..... IS THERE A RELATIONSHIP BETWEEN SEMINAL ZINC CONCENTRATION AND SPERM QUALITY IN OVERWEIGHT MEN?

215 ..... THE HEAVY METALS IMPACT ON THE HEAT SHOCK PROTEINS PRODUCTION IN THE RATS ENDOMETRIUM

216 ..... THE EFFECT OF HYPERGLYCEMIA ON THE STATE OF MUSCLE TISSUE IN CHILDREN WITH TYPE 1 DIABETES MELLITUS

217 ..... CHANGES IN THE BRAIN CORTICOSTERONE LEVEL IN CHRONICALLY STRESSED RATS TREATED WITH MEPHEDRONE – APPLICATIONS TO ADDICTION STUDIES

218 ..... HELICOBACTER PYLORI PECULIARITIES IN CHILDREN WITH GASTRITIS

219 ..... FEATURES OF BIOELECTRICAL IMPEDANCE ANALYSIS IN PATIENTS WITH COMORBID PATHOLOGY: CHRONIC PANCREATITIS AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE

220 ..... WARFARIN THERAPEUTIC DOSE DEPENDENCE ON CYP2C9, CYP4F2, VKORC1 GENES POLYMORPHISMS IN PATIENTS WITH ATRIAL FIBRILLATION

221 ..... BODY MASS INDEX AND HYPERTENSION - CLINICAL AND PARACLINICAL ASPECTS

222 ..... RUPTURED RENAL ANGIOMYOLIPOMA AS A RARE CAUSE OF ACUTE ABDOMEN. CASE REPORT.

223 ..... CAN WE DEFEAT SCHISTOSOMIASIS - A NEGLECTED TROPICAL DISEASE? EVALUATING LIVER PATHOLOGY MARKERS FOR TESTING OF A NOVEL ANTISCHISTOSOMAL TREATMENT

224 ..... PULMONARY EMBOLISM DIAGNOSIS IN PREGNANT WOMEN WITH ANGIO-CT OF THE PULMONARY ARTERIES - CAN IT BE USED IN CONNECTION WITH EXPOSURE TO RADIATION?

Psychiatry, Psychology and Human science in Medicine

226 ..... PREDICTORS ASSOCIATED WITH STUDIES AND LIFESTYLE AND SUBJECTIVE FEELING OF DEPRESSIVE SYMPTOMS AMONG MEDICAL STUDENTS.

227 ..... PREVALENCE AND FACTORS ASSOCIATED WITH DEPRESSIVE SYMPTOMS AMONG POLISH DENTISTRY STUDENTS.

228 ..... NEW OPTION FOR SLEEP DISORDERS CORRECTION IN ACTING MILITARY SERVICES.PSYCHOPHARMACOLOGICAL VS PSYCHOTHERAPEUTIC APPROACH.

229 ..... ALEXITHYMIA AND PSYCHOSOCIAL ADAPTATION IN MEN WITH SUBSTANCE USE DISORDERS AND DIFFERENT MARITAL STATUS

230 ..... ANXIETY IN PANDEMIC TIMES OF COVID-19 : A NARRATIVE REVIEW

231 ..... MOTIVATIONS FOR AESTHETIC MEDICINE PROCEDURES. A SURVEY AMONG 199 PATIENTS AIMED AT DYSMORPHOPHOBIA FEATURES.

232 ..... STUDY OF ADJUSTMENT DISORDER IN PATIENTS WITH A HISTORY OF SUICIDE ATTEMPT AND ITS ASSOCIATION WITH MARITAL ISSUES

233 ..... SURPLUS SWEATING AND SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIS): AN UNTAPPED SOLUTION

234 ..... CHOREOATHETOID MOVEMENTS EVEN WITH OLANZAPINE: TARDIVE TERROR NECESSITATES CONSTANT MONITORING

235 ..... SHOCKED TO WELLNESS: NEUROLEPTIC-INDUCED TARDIVE DYSTONIA NEEDING ELECTROCONVULSIVE THERAPY

236 ..... STRESS LEVEL OF HEALTHCARE PROFESSIONALS IN LITHUANIA: WHAT FACTORS COULD BE INFLUENCING IT?

237 ..... THE CASE OF CANNABIS-INDUCED DEPERSONALIZATION-DEREALIZATION DISORDER.

238 ..... 16 YEARS OLD PATIENT WITH BIPOLAR DISORDERS - A CASE REPORT

Public Health

240 ..... PRESSION OR PASSION? STUDY ADDICTION AMONGST MEDICAL UNIVERSITY STUDENTS

241 ..... THE WORLD AT YOUR FINGERTIPS- INCREASING INTERNET ADDICIONS AMONGST STUDENTS

242 ..... IMPORTANCE OF METAPHYLAXIS IN PATIENTS WITH UROLITHIASIS DISEASE

243 ..... REHABILITATION FOR CONGENITAL ANOMALIES OF THE MUSCULOSKELETAL SYSTEM IN CHILDREN. MUSCLE SPIRALS. PHYSICAL AND MATHEMATICAL JUSTIFICATIONS. POLISH AND UKRAINIAN EXPERIENCE.

244 ..... BODY IMAGE OF SENIOR PEOPLE: SELF-EVALUATION OF FACIAL AND BODY PARTS IN RELATION TO BIOLOGICAL AND

Radiology and Nuclear Medicine

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