27TH OF MAY 2023

BOOK OF ABSTRACTS

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Medical Sciences
Session I

Title: Rhabdomyosarcoma embryonale in 5-year-old child with neurofibromatosis type 1 - case report

Authors: Anna Krysińska[1], Antonina Marzec[1], Monika Richert-Przygońska[2]

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Presenting author: Anna Krysińska

Medical Sciences

Profession: Student

Oral presentation/Case Study

Introduction:

Neurofibromatosis type 1 (von Recklinghausen's disease) is an autosomal dominant phacomatosis with a complex clinical course. The most common symptoms concern skin, skeletal system, central and peripheral nervous system. A wide spectrum of symptoms results from a mutation in the NF1 gene, responsible for the production of neurofibromin, a protein that suppresses Ras kinases. Due to that, NF1 presents an increased risk of malignancies, such as soft tissue sarcomas.

Case report:

A 5-year-old girl diagnosed with Recklinghausen's disease was admitted to Hematooncology Clinic because of left eye ptosis and changes in behavior, observed for two weeks. On physical examination, the patient presented numerous café au lait macules, ptosis of the left eye, drooping of the left corner of the mouth, and vivid reflexes in the lower extremities. MRI was performed and a pathological mass was found on the superior-medial surface of the orbit. After a month, the MRI was repeated and the mass size increased drastically. The mass caused exophthalmos, pain in the left eye, and began to press against the optic nerve and oculomotor muscles. During hospitalization, a biopsy of the lesion was performed. Histopathological examination revealed rhabdomyosarcoma embryonale. The patient was qualified for chemotherapy according to the CWS guidance 2014 protocol. Since the tumor was not resectable, after 3 months of chemotherapy, a decision to implement radiotherapy was made. A few months after the end of treatment, a reduction of the lesion was observed and it was decided to resect the residual mass. After the procedure, the patient underwent control MRI examinations and remained under the supervision of numerous specialists on account of the underlying disease and treatment complications.

Conclusion:

Most rhabdomyosarcomas are sporadic. Nevertheless, RMS is also associated with several hereditary syndromes, such as Recklinghausen's disease. Described tumor progressed significantly within a short period of time, which is why the cooperation of multiple specialists, who qualified the patient for appropriate treatment, was so important. Radical treatment and follow-up care allow to reduce the risk of RMS recurrence. Therefore during the last decade, the survival of RMS patients has improved. However, patients with NF1 have an increased risk of malignancies and should be carefully monitored in case of a new neoplastic process occurring.

Title: Intracerebral Hemorrhage and Sudden Cardiac Arrest: A Diagnostic Challenge

Authors: Artur Drzewiecki

Affiliations: Collegium Medicum in Bydgoszcz, Faculty of Medicine, Department of Radiology and Imaging Diagnostics

Presenting author: Artur Drzewiecki

Medical Sciences

Profession: Student

Oral presentation/Case Study

Background:

Intracerebral hemorrhage (ICH) is an acute bleeding into the brain tissues, which can sometimes extend into the ventricles. According to estimates from 2020, approximately 3.41 million ICH cases occurred worldwide. ICH is caused by the rupture of the brain arteries, often resulting from long-term hypertension. Other predisposing conditions include heart failure, kidney disease, or antiplatelet therapy, which is commonly used after PCI. Sudden cardiac arrest (SCA) can be a potential cause of ICH, but also a complication of increasing compression of brain structures by blood. CT or MR imaging can be used to diagnose ICH and provide information on the stage of hemorrhage and its possible causes. The purpose of this case is to highlight the potential association between intracerebral hemorrhage and sudden cardiac arrest.

Case report:

A 79-year-old woman presented at the emergency department with shortness of breath, edema of the lower limbs, and a history of kidney and cardiac problems. The patient was referred to the cardiology department for heart failure treatment and seven days later underwent coronary angiography which revealed three-vessel disease. Treatment was administered using coronary artery stenting, and dual antiplatelet therapy was initiated. However, two days after the procedure, the patient's condition worsened. Blood tests showed anemia, water and electrolyte disturbances, and ECG monitoring revealed atrial fibrillation. As a result, the patient received RBC transfusion and hemodialysis. Twelve days after the surgery, the patient reported motor weakness in the left upper limb, and a CT scan of the head showed a hyperdense area in the left frontal lobe, suggesting a hemorrhagic area, as well as a fluid scar in the right caudate nucleus. Later that day, the patient suffered sudden cardiac arrest with asystole progressing to ventricular fibrillation. Resuscitation efforts were successful and spontaneous cardiopulmonary activity returned. A CT scan performed three days after the event showed extensive intracerebral hemorrhage with intraventricular extension. The patient was deemed ineligible for surgical treatment, remained unconscious for the next week, and passed away due to asystole.

Conclusion:

This case emphasizes the challenge of diagnosing intracranial hemorrhage in the context of SCA. When central nervous system (CNS) symptoms precede SCA, it is crucial to promptly initiate head imaging to avoid overlooking a potential cause or complication of SCA, such as intracranial hemorrhage. Therefore, obtaining a CT scan immediately after the return of spontaneous circulation (ROSC) could enable an early assessment of the extent of the hemorrhage, the risk of bleeding expansion, and determination of the appropriate treatment approach.

Title: Just another prolonged vaginal bleeding? – case report of a 43-year-old woman

Authors: Dominik Małek

Affiliations: Student Scientific Association of Periantology and Oncologic Gynecology, Collegium Medicum, University of Warmia and Mazury in Olsztyn

Presenting author: Dominik Małek

Medical Sciences

Profession: Student

Oral presentation/Case Study

Background:

Abnormal vaginal bleeding is a very common cause of women's visits in a gynecological outpatient clinic. Post-menopausal bleeding is always alarming. However, prolonged bleeding in pre-menopause is usually not so serious. There are a lot of reasons for this symptom and sometimes careful observation is a sufficient management.

Case report:

The forty-three-year-old woman was admitted to the Department of Gynecology due to vaginal bleeding lasting two weeks. Unsuspicious uterine leiomyomas were diagnosed in the past. The patient had two vaginal deliveries and one spontaneous miscarriage with the following curettage of the uterine cavity. She reported that her grandmother had leukemia and underwent a total hysterectomy. The curettage of the cervical canal and uterine cavity as well as the cervical biopsies were performed. The procedure and post-op outcome were uneventful, the patient was discharged. Histopathological examination revealed extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue (MALT). The patient was referred to a hematological unit.

Conclusion:

Marginal zone lymphoma is regarded as an indolent tumor with a good prognosis. It is frequently associated with chronic inflammation. However, in this case, no inflammation of the cervix was confirmed. Thus, familial history and genetic factors may have a crucial influence. Lymphoma is an extremely rare cause of abnormal vaginal bleeding. Nevertheless, it is worth keeping in mind that in every case we should carefully consider the probability of a neoplasia.

Title: Hybrid treatment of Carotid Body Paraganglioma in 45-year-old woman complicated by the stroke

Authors: Joanna Kaszczewska, Aleksandra Lorent, Jerzy Leszczyński, Zbigniew Gałązka
Affiliations: Department of General, Vascular, Endocrine, Transplant Surgery, Medical University of Warsaw

Presenting author: Joanna Kaszczewska
Medical Sciences
Profession: Student
Oral presentation/Case Study

Background:
Paragangliomas are rare, mainly benign, neuroendocrine tumours, originating from either the adrenal medulla chromaffin cells or from neural crest cells. They can be divided into parasympathetic and sympathetic subtypes. Paragangliomas can be diagnosed in various anatomical locations: abdomen, pelvis, thorax, head and neck. Sympathetic paragangliomas are most commonly observed in adrenal glands (phaeochromocytoma), while the parasympathetic ones are typically located in the head and neck region, most commonly in the carotid body - carotid body paraganglioma (CBP).

Case report:
A 45-year-old Caucasian female with previous medical history of thyroidectomy, was diagnosed with left sided CBP and qualified for elective surgical treatment.
The preoperative computed tomography (CT) showed a left sided 24x20 mm lesion surrounding and displacing internal carotid artery (ICA), external carotid artery (ECA), and internal jugular vein – it was classified as Schamblin 3. There was a suspicion of a smaller 5x10 mm CBP on the contralateral side. The patient was also diagnosed with a hypervascular intralaryngeal lesion of 12x11 mm – a suspicion of laryngeal paraganglioma (LP) was made.
The patient was qualified for multistage hybrid treatment allowing the removal of the laryngeal lesion and CBP. In the first stage, a successful embolization of the left CBP was performed with the liquid embolization agent (ONYX-18). The attempt of embolization of the laryngeal lesion was unsuccessful. Subsequently, the patient was qualified for partial laser laryngectomy, during which the lesion was removed. The patient was discharged from hospital and scheduled for elective surgical excision of the left CBP as the second stage of the treatment. During surgical removal of the left CBP, a partial resection of the ICA wall was performed - the artery was reconstructed with a PTFE patch. In the post-operative period the patient developed neurological symptoms: motor aphasia, right-sided hemiparesis with swallowing and fine motor skills disorders, and was diagnosed with ischaemic stroke secondary to the ICA and Common carotid artery (CCA) occlusion, which was confirmed in angio-CT. Subsequently, the endovascular recanalization of the ICA and CCA with Roadsaver Stent was performed and the thromboembolic material was removed from the left middle cerebral artery (MCA) and anterior cerebral artery (ACA) with Sofia 6F and 5F catheters. Despite the immediate intervention, symptoms of stroke did not resolve. The patient underwent phoniatric and motor rehabilitation, which resulted in the significant improvement of the motoric function of the right upper extremity as well as improvement in speech and swallowing. The patient was discharged with a referral for further rehabilitation.

Conclusion:
Although the recommended treatment requires surgical intervention, each patient should be assessed individually. In case of major complications, an immediate intervention should be considered for the well-being of the patient.

Title: Navigating the Complexities: Laparoscopic Sleeve Gastrectomy Performed on a Patient with Obesity and ADCY5-Related Dyskinesia

Authors: Michail Koutentakis
Affiliations: Department of General and Transplant Surgery, Medical University of Warsaw, Poland

Presenting author: Michail Koutentakis
Medical Sciences
Profession: Student
Oral presentation/Case Study

Background:
Despite the widespread availability of various conservative obesity treatment programs, long-term success remains elusive for many individuals. Bariatric and metabolic surgery (BMS) has emerged as a viable option for those with morbid obesity, with an increasing number of patients deciding on this kind of treatment. In this case report, we present a patient with rare ADCY5-related dyskinesia who underwent laparoscopic sleeve gastrectomy (LSG). We describe the patient's clinical history, surgical procedure, and postoperative course, highlighting the potential benefits and challenges of BMS.
Case report:
A 49-year-old female with a history of hypertension, diabetes mellitus type 2, drug-induced obesity with a BMI of 43, hypercholesterolemia, familial chorea, and depression was referred to the Department of General and Transplant Surgery in 2022 for bariatric surgery. Two years prior, the patient had started the process of qualification for BMS, due to her unsuccessful attempts to lose weight through dieting, but she resigned because of social issues. In the meantime, the patient was diagnosed with ADCY5-related dyskinesia, and caffeine was introduced as a first-line therapeutic treatment for her symptoms. Following the necessary clearances from the neurologist, cardiologist, anesthesiologist, and psychologist, the patient was qualified for the BMS. The decision was made to perform LSG to minimize the risk of malabsorption which could lead to a worsening of the dyskinesia. After LSG the patient experienced no complications and reduced her weight by 14 kg in a month. The patient received psychological and dietary consultations and multivitamin supplementation after the surgery. Despite the initial success of the operation, the patient regained most of the weight due to modifications of the neurological treatment. Because of insomnia, pregabalin and mianserin were prescribed which caused weight recidivism in this patient.
Conclusion:
To our knowledge, this is the first described case of a patient with ADCY5-related dyskinesia who underwent BMS. LSG seems to be a safe operation for this group of patients. Most importantly this case report highlights the importance of considering a patient's medical history when selecting an appropriate bariatric surgical procedure. A multidisciplinary approach in the management of both of those chronic diseases is crucial. Understanding the factors that contribute to the success of BMS is essential for healthcare professionals to optimize patient outcomes and improve the quality of life for individuals with morbid obesity.

Title: The novel approach to the treatment of deficiency of abdominal muscles – case report of a 12-year-old patient with prune belly syndrome

Authors: Dominik Małek

Affiliations: Pediatric Surgery Students' Association, Collegium Medicum, University of Warmia and Mazury in Olsztyn

Presenting author: Dominik Małek

Medical Sciences

Profession: Student

Oral presentation/Case Study

Background:

Prune belly syndrome (PBS) is a rare congenital disorder. It's characterized by the triad of deficient abdominal musculature, cryptorchidism, and urinary tract malformations. Each of them might be corrected by surgical intervention. However, the first one seems to be the greatest challenge.

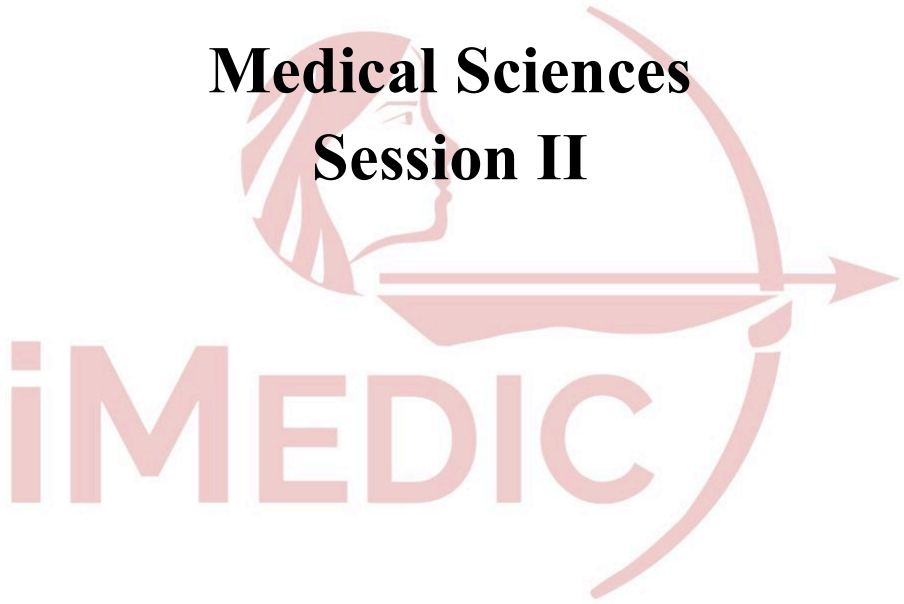
Case report:

The twelve-year-old patient with PBS was admitted to the Department of Pediatric Surgery to perform abdominal musculature reconstruction. The patient went through multiple surgeries in the past due to congenital bilateral hydronephrosis, and cryptorchidism. The general condition of the boy was good, so he was qualified for the reconstruction. The procedure began with the plication of peritoneum. The next step was the formation and transposition of the pedicled neurovascular myofascial flaps from both thighs to the abdomen wall. The flaps were sutured to corresponding costal margins and each other. Excess skin was removed. Drainage was applied. The surgical wounds healed slowly. Also, there were complications. However, the patient was discharged in a good general state and began his physical therapy.

Conclusion:

Treatment of deficient abdominal musculature is based on abdominoplasty so far. However, the reconstruction of muscles should be considered. It might help in bladder emptying, and prevent respiratory infections as well as constipation. For sure, it improves the quality of life of patients with PBS.

Medical Sciences
Session II



Title: Cardiac Sarcoidosis: A Case Study

Authors: Nnabuike Eneh
Affiliations: Department of Cardiology, Antoni Jurasz University Hospital No. 1 in Bydgoszcz

Presenting author: Nnabuike Eneh
Medical Sciences
Profession: Student
Oral presentation/Case Study

Background:
Sarcoidosis is a rare multisystem autoimmune disorder that results in the formation of noncaseating granulomas. Most people with sarcoidosis present with respiratory symptoms but cardiac involvement is also prevalent. There is no known cure for cardiac sarcoidosis but appropriate treatment can help manage symptoms and improve overall patient outcome. This case study examines the multifactorial approach involved in the management of cardiac sarcoidosis.
Case Study:
A 49-year-old male with sarcoidosis was admitted to the Cardiology Department due to palpitations. Cardiac involvement of sarcoidosis was confirmed by MRI 2 months prior. ECG displayed evidence of ventricular extrasystole which aligned with patients complaints of abnormal heartbeats. Further ECG monitoring showed single premature ventricular contractions (PVCs) and non-sustained ventricular tachycardia (nsVT). Echocardiogram displayed bilateral atrial enlargement without left ventricular dilation or hypertrophy. Immunosuppressive therapy consisting of prednisone and methylprednisolone was administered. Patient was started on beta-adrenolytics (class II anti-arrhythmic drug).
3 months after the previous presentation, the patient was admitted to the Cardiology Department due to increased palpitations. ECG monitoring revealed sustained ventricular arrhythmias. Metoprolol was ceased and sotalol (class III anti-arrhythmic drug) was introduced. Prednisone dose was escalated. Patient underwent implantation of a dual chamber cardioverter-defibrillator for the primary prevention of sudden cardiac death. Introduction of sotalol has brought the reduction in ventricular arrhythmias.
4 months later, the patient was admitted with recurrent monomorphic VT 130-140/min, LBBB-like morphology successfully treated with anti-tachycardia pacing. Patient was switched from sotalol to flecainide and timely corticosteroids were escalated with reduction of the arrhythmia burden.
Conclusion:
The presentation of cardiac sarcoidosis ranges amongst patients. There is an associated risk of ventricular arrhythmias and sudden cardiac death. The management of ventricular arrhythmias in patients with cardiac sarcoidosis is based on individualization of treatment with corticosteroids, anti-arrhythmic agents and ablation.

Keywords:
Cardiac sarcoidosis; ventricular arrhythmia; ICD; sudden cardiac death

Title: MMA Embolisation Use as a Stand-Alone Treatment in the Elderly

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[2]Department of Interventional Radiology at University Hospital No. 2 dr. Jan Biziel

Presenting author: O. Joshua Sokan
Medical Sciences
Profession: Student
Oral presentation/Case Study

Background:
Chronic subdural hematoma (cSDH) is an increasingly critical condition due to our changing demography. Burr-hole surgery using irrigation and subdural drainage are established management options to treat cSDH. However, as the average life expectancy is steadily increasing, as physicians, we are presented with a society that is more prone to SDH and less likely to be candidates for conventional open surgery. SDH has significantly been associated with the elderly population. A community that typically takes numerous drugs for their chronic comorbidities.
The use of endovascular embolisation of the middle meningeal artery (MMA) in managing cSDH is yet to be established as a standard treatment modality. As the world of medicine advances towards a future of less invasive procedures and reduced hospital stays, MMA embolisation is becoming more widespread as a valuable treatment option in cSDH. It is a minimally invasive procedure used as a stand-alone procedure and as an adjuvant treatment for surgical evacuation of cSDH.This case report highlights the success of MMA embolisation and poses the idea that, in some patient groups, it may be used as a first line of treatment.
Case Study:
A 73-year-old woman was referred to the neurology department due to progressive neurological symptoms—no recent history of a significant fall or trauma to the head. CT revealed a L-sided cSDH, measuring 15mm in thickness. No displacement of central structures was evident on CT imaging. The patient was then referred to our neurosurgical department. The patient reported mixed aphasia as her primary symptom along with right-sided hemiplegia, tremors and vertigo. With a pre-op GCS of 14/15.
Superselective angiography and embolisation were performed under general anaesthesia. Once she had recovered after the procedure, she reported that the aphasia had ceased, along with all other associated symptoms. Post-op GCS 15. With a reduction in size from 15mm to 7mm in 4 weeks. Factors such as age, patient preference and recurrence rate were all considered before deciding on the method of treatment taken. The recurrence rate for MMA embolisation is 3.6% compared to rates of burr hole craniotomy (11.7%), craniotomy (19.4%), and twist drill craniotomy (28.1%) As of this moment, we may say the stand-alone MMA embolisation has been a success. The patient was scheduled for follow-up scans afterwards.
Conclusion:
Embolisation of the MMA, as a stand-alone treatment option for cSDH, is emerging as a viable treatment modality. Numerous clinical trials are underway to establish criteria for treatment consideration. Although an optimal patient group may be required, MMA embolisation is a safe procedure with low complications and low failure rates. MMA embolisation as a stand-alone management method could be successfully used regardless of whether the cSDH is refractory or not. The future and potential benefits of MMA embolisation are quite promising.

Title: Trisomy 8 associated autoinflammatory disease managed with 1L receptor antagonist Anakinra

Authors: Melanie Abassah
Affiliations: SKN Pediatrics and Paediatric Hematooncology CM UMK

Presenting author: Melanie Abassah
Medical Sciences
Profession: Student
Oral session/Case Study

Background:
Trisomy 8 (T8M) associated autoinflammatory disease has huge variability in the phenotypic presentation, owing to the mosaic nature of the aberration. As such many cases of T8M autoinflammatory disease (TRIAD) go undiagnosed. T8M is associated with mental retardation and congenital abnormalities. Including joint contractures, deep palmar and plantar creases, corpus callosum agenesis, skeletal and renal anomalies, the majority of which are seen in this patient.
We report 95% Trisomy 8 mosaicism in a 17-month boy with recurrent febrile episodes and classic T8M dysmorphia.
Case Study:
A 17-month-old male born by cesarean section in August 2020, presented to the clinic for immunological investigations. He had a birth weight of 1830g and APGAR 6/7/7 points. The patient underwent a cardio-surgery correction of VSD in March. He underwent transection of his posterior urethral valve due to 3rd-degree urinary reflux and hydronephrosis. He was diagnosed with agenesis of the corpus callosum, dilated cisterns, ventriculomegaly, decreased muscle tone and hypospadias.
The patient had an extensive history in the department due to recurrent non-infectious febrile episodes, which spanned 15 months, from January 2022 to April 2023. The child would present with high-grade fever ranging from 38°C-40°C, palpable swelling of the left cervical lymph nodes, pain and elevated inflammatory markers. Inflammation of lymph nodes was found on extensive ultrasound imaging. There were multiple systemic infections including suspected meningitis in May 2021, clostridium difficile infection, upper respiratory tract infection in December 2021 and norovirus in January 2022.
No immunological markers for severe congenital immunodeficiency were found during the diagnostic process. Genetic testing was performed and found microduplications on the chromosome 8 fragments and abnormalities in the AIRE gene. Cytogenetic examination of the bone marrow showed trisomy 8 in 95% of the cells.
Based on the findings and poor clinical response to steroid therapy, we initiated treatment with an anti-IL-1 drug. Therapy with Anakinra was initiated on 5/1/2023 off-label with an excellent response. After 3 doses of the drug combined with methylprednisolone, he experienced gradual normalization of inflammatory markers and gradually declined CRP from 239.40mg/L to 8.24 mg/L.
Conclusion:
Our case demonstrated phenotypic comparability with classically documented literature published for T8M. Hybrid therapy with oral corticosteroids and anakinra to manage the evolution of the patient's autoinflammatory disease has yielded desirable laboratory and clinical results.

Title: Is a change in the abdomen always a cancer? 2-week-old newborn with a prenatal diagnosis of tumor in adrenal glands - a case report

Authors: Marika Szymczyk, Oliwia Kudrej
Supervisor: dr n .med. Monika Richert-Przygońska
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Ludwik Rydygier Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń

Presenting author: Marika Szymczyk
Medical Sciences
Profession: Student
Oral presentation/Case Study

Background:
A tuberous lesion in the abdomen always raises oncological anxiety. The most common childhood cancers located in the abdomen include neuroblastoma, Wilms tumor, germinal tumors and primary liver cancers.
Case Study:
A 2-week-old male newborn was sent to the Department of Pediatrics, Hematology and Oncology in Bydgoszcz in order to expand the diagnosis of abdominal lesions revealed in the prenatal examination in the last trimester of pregnancy. A lesion in ultrasound was described as a litho-cystic formation with a diameter of up to 3 cm located between the spleen and the left kidney. From the interview, a child born at the time by caesarean section due to lack of progress in labour, pregnancy I, complicated by gestational diabetes and COVID-19 infection, Birth I and birth weight 3680g, Apgar 10 points. In family history, numerous kidneys' cysts in the child's father. At the admittance, the child is in a good general condition. In the examination the arch of the abdomen above the level of the chest and the unobtrusive yellowing of the face with single acne eruptions. In the child abdominal ultrasound was performed showing an ambiguous change at the upper left kidney pole, a chest X-ray that did not show the tumor in the mediastinum and a daily urine collection to assess the excretion of catecholamines and their metabolites. Laboratory tests confirmed increased excretion of homovanilic acid in the urine. As part of further diagnostics, the patient was directed to a planned MIBG scintigraphy, which described the intensive accumulation of the radioisotope in the entire tumor volume, which spoke for the neuroblastoma, without the characteristics of metastasis. During subsequent hospitalizations at 3-week intervals, the tumor size was monitored in imaging studies and the amount of excreted catecholamines in the urine, the value of which increased above the upper limits of the norm for norepinephrine, adrenaline, homovanilinic acid and vanillylmandelic acid, and the AFP level was additionally determined (155.74 ng/ml N:<8.78). As a result, the diagnosis was extended to include abdominal MRI, which describes the change in size of 26x27x32 mm with a good separation, peripheral contrast enhancement and central hemorrhagic focal point - non-specific image.
Conclusion:
Neuroblastoma is the most common neoplasm of the neonatal period, its most common location is the adrenal medulla. Depending on many biological factors, the age of the patient or genetic factors, complete regression of the disease is possible, even in the form of a metastatic disease. Therefore, infants whose tumor mass is small and have small metastases in the liver and bone marrow are monitored according to the "watch&wait" strategy.

Title: FMT as a method of treatment of multidrug-resistant infections and intestinal graft-versus-host disease

Authors: Magdalena Drozd, Adrianna Kaczmarek
Affiliations: SKN Pediatrii i Hematoonkologii Dziecięcej Collegium Medicum w Bydgoszczy

Presenting author: Magdalena Drozd
Medical Sciences
Profession: Student
Oral presentation/Case Study

Background:
Faecal microbiota transplant (FMT) is gaining popularity with clinical practice. Nevertheless, it is concerned to cure gastrointestinal and extra-gastrointestinal disorders which are connected to disturbed composition and functionality of gut microbiota. Currently, the method is discussed as therapeutic option for Graft-Versus-Host-Disease.

Case Study:
We present outcomes of using FMT procedure in recurrent gastrointestinal infections caused by colonization of multidrug-resistant microorganisms and against GVHD in 17-year-old male patient after haploidentical hematopoietic cell transplantation. The patient was qualified to HTC due to acute lymphoblastic leukaemia relapse. Soon after HTC, acute GVHD with skin and gastrointestinal manifestations was diagnosed. The patient presented skin rash with itching, erythema, bullous and popular changes which covered over 50% of skin surface. Moreover, the patient complained about dry mouth and leucoplakia was observed. Acute cutaneous (grade III) and oral cavity (grade I) GVHD was diagnosed. The patient experienced nausea, vomiting, heartburn and diarrhoea with increased body temperature. Results of endoscopy confirmed intestinal GVHD occurred with a severe mucositis of the GI tract and complete atrophy of the glandular layer and extensive fibrosis of the gastric mucosa. Acute pancreatitis with increased blood and urine amylases was diagnosed. A relapse of GVHD symptoms caused a weight loss with poorly developed adipose tissue. Parental and enteral nutrition was needed to be introduced. The GI tract was colonized by multidrug resistant microorganisms such as Enterococcus faecium ESBL, Candida glabrata and Klebsiella pneumoniae, which progressed with ascites, oesophageal ulceration, intestinal obstruction, gastrointestinal bleeding, abscesses in the liver, spleen and lungs of Candida ethology and eventually led to a septic shock. Those episodes of recurrent gastrointestinal infections repeated regularly. Due to multidrug resistant GI tract infection, the patient was qualified for FMT. The procedure was performed in general anaesthesia. After several months, microbiological tests proved that GI tract was still colonised by previously detected microorganisms. However, the symptoms of the gastrointestinal infection disappeared completely. The symptoms of intestinal GVHD were no longer observed either and the amylase level returned to normal. Also, oral nutrition was switched back and the patient gained weight.

Conclusion:
Although eradication was impossible FMT procedure resulted in resolution of symptoms of enteritis and intestinal GVHD. The curation significantly improves the quality of patient's life so it can be assumed that the clinical effect of the procedure was achieved. This clinical case shows another utility of using FMT and give an opportunity to put under deep consideration the using of FMT as another medical treatment option against intestinal GVHD and infections with multidrug-resistant microorganisms.

Title: Differentiation of skin lesions in a 5-month-old infant

Authors: Oliwia Kudrej, Marika Szymczyk
Supervisor: dr n. med. Monika Richert-Przygońska
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Ludwik Rydygier Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń

Presenting author: Oliwia Kudrej
Medical Sciences
Profession: Student
Oral presentation/Case Study

Background:
Skin changes in children are a very common and non-specific symptom. When differentiating changes, the nature of the eruptions, their variability in time, previous treatment and additional symptoms such as itching or fever are taken into account. Childhood dermatoses differ in course from those in adulthood because of weaker innate and acquired immune response in the first years of life.

Case Study:
A 5-month-old female infant sent from the emergency room to the Department of Pediatrics, Hematology and Oncology in Bydgoszcz due to the presence of skin lesions of unknown background. In the girl aged 4-months, after the end of treatment of pneumonia, skin changes of erythematous-exfoliating nature appeared. Suspected primary immunodeficiency. From the interview, a child born prematurely, forces of nature in 36hbd, pregnancy III, childbirth III. Birth weight 2640g, Apgar 10 points. Previously breastfed, normal development. Family history for immune deficiencies unencumbered. The child is admitted in a good general condition. For about a week before admittance, loose stools without losing weight. In physical examination erythematous-exfoliating changes on the skin of the cheeks, the area of the wrists and the diaper area. Basic blood, urine tests and the percentage of lymphocytes in the blood sample were ordered, the results were normal. Due to the suspicion of the infectious nature of the rash, empirical systemic antibiotic therapy was included which was terminated when the microbiological result from skin swabs was obtained, which did not confirm the presence of pathological flora. A dermatological consultation was ordered during which the doctor ordered the extension of the diagnosis and the performance of a test of zinc concentration in the blood serum. The child was diagnosed with a deep zinc deficiency (296.85 ug/l, norm 1025-1175 ug/l). Acrodermatitis enteropathica was diagnosed based on the outcome and clinical picture. The patient was discharged in a general good condition with the recommendation of zinc supplementation and referral to genetic counselling and metabolic diseases to confirm the underlying cause of the disease.

Conclusion:
On the basis of the presented symptoms in the infant, a wide diagnosis of the underlying skin changes was started. After additional studies and the elimination of the primary immunodeficiency, Acrodermatitis enteropathica was diagnosed, which in infants may show psoriasis-like skin changes, hair loss, diarrhea and growth retardation, and may even lead to the death of the child. This case is an example of the interdisciplinary involvement of hematoncologists, geneticists and dermatologists in the diagnostic process of a pediatric condition.

Health Sciences

Title: Assessment of cinnamic acid influence on contractility of gastric smooth muscles in humans

Authors: Andrzej Chomentowski, Barbara Łukaszewicz, Sebastian Skowron
Affiliations: Department of Biophysics, Medical University of Bialystok

Presenting author: Andrzej Chomentowski
Health Sciences
Profession: PhD Student
Oral presentation

Introduction:
Cinnamic acid is a polyphenol compound found in plants that has become more popular as its beneficial properties for the human body are discovered. It has been shown to have various advantages, including its ability to function as an anti-diabetic and anti-oxidant, and some studies suggest that it may even have vasodilatory effects. However, there has been no research assessing its relaxant properties in the human gastric tract.

Aim of the study:
The study aims to evaluate how cinnamic acid impacts the contractility of smooth muscles in the human stomach. Furthermore, we aim to investigate the connection between cinnamic acid's effects and the natural synthesis of nitric oxide and activation of potassium channels.

Material and methods:
The research was carried out on gastric snippets obtained from patients undergoing sleeve gastrectomy due to morbid obesity (N=10). The tissue samples were gathered during the surgery and transferred to the laboratory in ice-cold Tyrod buffer. The layer of smooth muscles was dissected, attached to a strain gauge, and placed in a tissue bath with Tyrod buffer at physiological temperature. After an accommodation period contractions of muscles were stimulated using carbachol. Only strips showing stable activity in response to an agonist have proceeded further in the experiments. Cinnamic acid was diluted in ethanol and increasing concentrations were added cumulatively to the tissue chamber. L-NMA blocked endogenous NO synthesis. Potassium channels were blocked by broad-spectrum potassium channel deactivator TEA and selectively with glibenclamide, apamin, and $BaCl_2$. The area under the curve (AUC), an average baseline muscle tone, and relative change in muscle contraction were evaluated using a strain gauge. The statistical analysis was performed using ANOVA or the Kruksal-Wallis, where appropriate. The results were considered statistically significant at $p \leq 0.05$.

Results:
We found that exposure to cinnamic acid caused dose-dependent relaxation of the strips, which was statistically significant and manifested by a decrease in the AUC compared to the control. The relaxation was prevented by preincubation with L-NMA, an inhibitor of the endogenous NO synthesis pathway, as well as by the broad-spectrum potassium channel deactivator TEA, and selective blockers glibenclamide, apamin, and $BaCl_2$.

Conclusion:
Our results suggest that cinnamic acid has potential to become a nutraceutical for treating functional gastrointestinal dyspepsia and other gastric motility disturbances.

Title: Fourth ventricle – Anatomy and morphometry in healthy young adults

Authors: Jakub Batko, Daniel Rams, Andrzej Urbanik, Monika Ostrogórska
Affiliations: Department of Radiology, Medical College, Jagiellonian University

Presenting author: Jakub Batko
Health Sciences
Profession: Student
Oral presentation

Introduction:
Diseases of the cerebrospinal fluid circulation affect the geometry and morphometry of the fourth ventricle. Their analysis may provide prognostic information that is critical for patient well-being. However, there are no data in the literature on the parameters of this structure in healthy individuals with magnetic resonance.

Purpose:
The aim of the study was to analyze the parameters of the fourth ventricle in a healthy adult population and the effects of patient anthropometry on its dimensions.

Material and methods:
Thirty T1-weighted MR scans were performed and analyzed in healthy adults (50% women, mean 23.3±2.2 years) with normal body mass index values (18.5-24.99). The RadiAnt program was used to evaluate the fourth ventricle: the greatest transverse and longitudinal dimensions, ventricular depth, ventricular roof length, and angle between the cerebellar peduncles.

Results:
The average transverse dimension was 14.0±1.8 mm, the longitudinal dimension was 25.3±4.3 mm, the depth was 11.1±2.0 mm, the length of the roof was 12.3±2.2 mm, and the angle between the cerebellar peduncles was 72.2±14.1º. No significant differences or correlations were found between anthropometric parameters.

Conclusion:
The dimensions of the fourth cerebral ventricle presented in the above study represent parameters of a healthy young population and can be treated as a reference point in studies examining patients with alterations in this area.

Title: Structural abnormalities of the liver in overweight and obese patients

Authors: Aleksandra Białczyk[1], Alicja Rajewska[1], Kinga Koperska[1], Roman Junik[2], Szymon Suwała[2]

Affiliations: [1]Student Scientific Circle Evidence-Based Medicine at the Department of Endocrinology and Diabetology, Ludwik Rydygier Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń

[2]Department of Endocrinology and Diabetology, Ludwik Rydygier Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń

Presenting author: Aleksandra Białczyk

Health Sciences

Profession: Student

Oral presentation

Introduction:

Overweight and obesity are perceived as factors exacerbating the restructuring processes of the liver parenchyma, especially its fibrosis. Currently, the primary method of assessing fibrosis in this organ is by biopsy and histopathology. However, this invasive procedure is inherently associated with the possibility of complications, so non-invasive methods with similar sensitivity for detecting liver fibrosis are constantly being sought. The ideal procedure should be readily available, low-cost, and capable of assessing the extent of the disease, as well as monitoring treatment efficacy and progression. Such methods include non-invasive liver fibrosis markers and elastography (Fibroscan).

Aim of the study/purpose:

This study aims to analyze the prevalence of hepatic steatosis and fibrosis in patients in the obese population and to try to find the best non-invasive marker of hepatofibrosis for this group.

Material and methods:

The study group consisted of 160 patients from the Endocrinology and Diabetology Outpatient Clinics of University Hospital No. 1 in Bydgoszcz. Each patient had biological material collected for parameters to assess non-invasive markers of liver fibrosis (e.g., AST/ALT, AP index, Forns index, FIB-4, etc.) and liver elastography (Fibroscan) performed to assess steatosis and fibrosis objectively. The data were subjected to statistical analysis. The work was realized with funding from the Ministry of Education and Science through the program "Students' Scientific Circles Create Innovations."

Results:

Overweight and obese patients were more likely to exhibit features of steatosis (75.83% vs. 22.50%; $p<0.001$) and liver fibrosis (45% vs. 15%; $p<0.001$) than the healthy population - obesity was associated with a 3.37x greater risk of hepatic steatosis (95%CI: 1.88-6.04) and a 2.72x greater risk of hepatofibrosis (95%CI 1.26-5.87). Patients with steatosis had a higher BMI (30.61 kg/m2 vs. 26.36 kg/m2), as did those with features of fibrosis (31.90 kg/m2 vs 27.83 kg/m2). The PLF score was found to be the most effective available marker of hepatofibrosis (with a sensitivity of 79.1% and a specificity of 97.2%). However, the authors' analysis allows for the development of a new, more sensitive index. The full results of the study will be presented at the conference.

Conclusion:

Overweight and obesity are associated with an increased risk of liver parenchymal remodeling. Complete conclusions will be presented at the conference.

Title: How to standardize nuchal fat measurements?

Authors: Jakub Batko, Daniel Rams, Andrzej Urbanik, Monika Ostrogórska
Affiliations: Department of Radiology, Medical College, Jagiellonian University

Presenting author: Jakub Batko
Health Sciences
Profession: Student
Oral presentation

Introduction:
Neck fat measurements are predicted based on the total circumference of the neck without directly assessing the layer of adipose tissue. This can lead to erroneous results in patients with oversized muscles in this region or with other pathologies.
Aim of the study:
The aim of this study was to assess the adipose tissue layer of the neck in healthy individuals using MR images.
Material and methods:
T1-weighted images were acquired in 30 healthy young adults (23.3±2.2 years old, 50% women) with correct body mass index values. All measurements were performed using the RadiAnt program. Neck fat thickness was measured in the midline of the body at three levels: Foramen magnum, second and fourth spinous processes of the cervical spine. The average neck fat thickness was calculated. Results were corrected for body surface area (BSA).
Results:
Mean neck fat thickness was 6.9±2.2 mm, 6.7±2.0 mm at the level of the foramen magnum, 7.1±2.3 mm, and 6.9±3.0 mm at the level of the second and fourth spinous processes of the cervical spine, respectively. Statistically significant sex differences were found in the adjusted thickness of adipose tissue at the level of the foramen magnum (M: 3.2±1.1 mm vs. K: 4.2±1.0 mm, p=0.004) and in the adjusted mean thickness of adipose tissue (M: 3.4±1.1 mm vs. F: 4.2±1.4 mm, p=0.041).
Conclusion:
The adjusted value for neck fat thickness is significantly greater in women than in men. The obtained results provide a baseline value for the thickness of adipose tissue in healthy young adults. All measurements should be corrected for body surface area to obtain reliable data.

Title: ChatGPT replacing endocrinologists and diabetologists in Poland? Hold your horses!

Authors: Alicja Rajewska[1], Aleksandra Białczyk[1], Kinga Koperska[1], Roman Junik[2], Szymon Suwała[2]
Affiliations: [1]Student Scientific Circle Evidence-Based Medicine at the Department of Endocrinology and Diabetology, Ludwik Rydygier Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń
[2]Department of Endocrinology and Diabetology, Ludwik Rydygier Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń
Presenting author: Alicja Rajewska
Health Sciences
Profession: Student
Oral presentation

Introduction:
ChatGPT is an Artificial Intelligence (AI) trained as an interactive conversational model chatbot that can respond to various textual prompts. It was shown to the world in November 2022. Day by day, it's getting more complex and it's spectrum is being expended. In some areas ChatGPT is slowly replacing work that earlier could been done only by humans. Is medical community also in danger? Whether doctors like endocrinologists and diabetologists in Poland could also be replaced by AI if it could pass specialization exams?

Aim of the study:
This study aims to analyze if ChatGPT could pass specialization exams (Polish acronyme: PES) in both Endocrinology and Diabetology in 2023.

Material and methods:
Diabetology and Endocrinology PES questions have been introduced into ChatGPT's interface. There were three different ways to ask questions to AI. First method was only the question from the exam, simply pasted to interface. Second included "answer the question" at the beginning of the command. Third method included "play as a doctor and answer the question". The results for each method were counted and verified to check if ChatGTP could pass the exam (by receiving at least 60% of total points, which is the specialization exam's pass mark).

Results:
Depending on the method different results were obtained. Diabetology exam results differ from 34.75% to 45.76% and Endocrinology from 34.17% to 38.3%. The highest scores were achieved in second method. Full statistical results will be presented at the Conference.

Conclusion:
ChatGPT would not pass the specialization exams (PES) in Diabetology and Endocrinology for now. Although it is possible that in the future with appropriate machine learning methods it would happen. At the moment human's brain can not be replaced by AI. Full conclusions will be presented at the Conference.

Title: Proposed procedure in the case of intervention of Medical Rescue Teams to patients / victims affected by domestic violence (adults, women and children)

Authors: Nicholas Karolak
Affiliations: University Hospital No. 1 Dr. Antoni Jurasz - Hospital emergency ward

Presenting author: Nicholas Karolak
Health Sciences
Profession: One year after graduation
Oral presentation/ Review

Introduction:
The operation of Medical Rescue Teams in Poland is based on Evidence Based Medicine and top-down guidelines and developed procedures specified in the Act of 8 September 2006 on State Medical Rescue. However, there are no clearly defined guidelines or proposed procedures for patients affected by domestic violence and the situation of intervention for patients in a violent environment.
Aim of the study/purpose:
In my work, I present aspects that should be taken into account when intervening with patients affected by domestic violence or still in an environment that threatens their health on a daily basis. In addition, I specify what symptoms should be paid special attention to during the intervention and in what situations the patient may be suspected of being a victim of domestic violence.
Material and methods:
Research materials available on Google Scholar, existing research articles on domestic violence, symptoms and behaviors of victims of domestic violence, and proposed ways to help victims of violence were used.
Results:
The exact symptoms and behaviors of victims of violence were defined, the most common appearance of the environment of victims of domestic violence and possible behaviors of aggressors committing violence were determined. The proposed behavior for paramedics at the time of intervention and possible forms of assistance to victims at the time of rescue intervention were also specified.
Conclusion:
There is a lack of training for paramedics in the field of clinical communication and procedures for dealing with patients affected by domestic violence. It is impossible to clearly define the exact scheme of operation for Medical Rescue Teams due to the heterogeneity of the phenomenon of domestic violence, because each such situation should be treated individually and the team's operation should be adapted to the existing state of affairs.

Title: What is the impact of gender on the personalization of treatment of rheumatological diseases? A cross-sectional study of patients treated at University Hospital in Cracow under the PolNorRheuma program.

Authors: Anna Bereta, Olga Tuleja, Karol Szudy

Affiliations: Student active member of the scientific group in Department of Rheumatology and Immunology, Jagiellonian University Medical College

Presenting author: Anna Bereta

Health Sciences

Profession: Student

Oral presentation

Introduction:

Rheumatic diseases are a group of inflammatory diseases, the classification is based on clinical symptoms: pain, swelling, stiffness, joint mobility limitation, as well as the results of auxiliary laboratory tests. Patients suffering from spondyloarthropathies have inflammatory changes in the joints of the spine, perivertebral tissues, peripheral joints and in other systems and organs. Inflammatory spondyloarthritis includes: Ankylosing Spondylitis (AS), Non-radiographic axial Spondyloarthritis (nr-axSpA), Psoriatic Arthritis (PsA) and Psoriatic arthritis with axial disease (axPsA). It is a group of rheumatic diseases with similar symptoms and background. During the treatment of these diseases, special attention should be paid to the sex and age of patients in order to select the most optimal treatment.

Aim of the study:

The aim of our study was to look at the treatment of women and men suffering from spondyloarthropathies and to simultaneously assess disease activity using various indicators such as MHAQ, BASDAI, ASDAS.

Material and methods:

After analysing the selected sample, randomly chosen 24 patients with axPsA, 147 patients with PsA, 181 patients with AS, and 30 patients with nr-axSpA from the outpatient department of University Hospital in Cracow were included in the study. As part of the POLNOR-RHEUMA scientific project. To conduct the analysis, data from patient's medical history was used. Furthermore, to evaluate the current activity of the disease, data from the last visit was considered, including CRP, ESR, back pain, pain, joint pain, MHAQ, BASDAI, DAPSA.

Results:

Among patients with nr-axSpA and PSA, women predominated (60%, 51%), while in patients with AS and axPsA, men predominated (61%, 70%). Currently, the dominant form of treatment is biological treatment (except for PsA, where DMARDs predominate in 74.1% and additionally only 51.7% of patients take biological treatment). To assess the treatment and activity of spondyloarthritis, we used the MHAQ (health assessment questionnaire), ASDAS and BASDAI questionnaires, which are dedicated to inflammatory diseases. The results of our study displayed that with biological therapy, women score higher on the assessment of pain, back pain and joint pain. Statistically significant differences between the response of men and women to treatment are most pronounced in AS and nr-axSpA.

Conclusion:

It is extremely important to personalize treatment methods depending on gender. Inappropriately treated rheumatic diseases are associated with the risk of disability, pain and a significant decrease in the quality of life. Inflammatory changes are often irreversible. From the preliminary results of our work, it can be concluded that women, despite equally aggressive treatment, respond less well. We observe this in statistically significant differences in the results of laboratory tests and indicators of disease activity. Such conclusions oblige us to personalize treatment.

Title: Mask Mouth Syndrome

Authors: Katarzyna Szmyt, Wiktoria Jaskulska

Affiliations: Studenckie Koło Naukowe Interdyscyplinarnego Rozwoju i Nauki, Wydział Nauk o Zdrowiu, Collegium Medicum im. Ludwika Rydygiera w Bydgoszczy, Uniwersytet Mikołaja Kopernika w Toruniu

Presenting author: Katarzyna Szmyt

Health Sciences

Profession: Student

Oral presentation

Introduction:

The Covid-19 pandemic causing the rapid spread of the Sars-CoV-2 virus has caused governments around the world to introduce restrictions to limit its transmission. One of the methods to reduce the risk of infection among people and fight the pandemic was the mandatory wearing of masks covering the mouth and nose, especially in large groups of people. They were worn for most of the day - up to eight hours a day, especially by medical and pharmaceutical personnel. The analysis of scientific articles showed the emergence of scientific publications, mainly in English, on the consequences of the use of masks by societies. It occurred that using them continuously led to the formation of the so-called “mask-mouth syndrome”. Studies have shown that the problem of this phenomenon focuses primarily on the condition of the oral cavity caused by the long-term use of protective masks. Researchers point out, however, that the benefits of their use related to the function of protecting people against pathogen infection were much greater than the potential side effects, which can include the mask-mouth effect.

Aim of the study:

1. The analysis of available articles and publications describing research and the conclusions drawn from them in the field of oral diseases caused by wearing protective masks in the era of Covid-19 pandemic, described by researchers as the mask-mount syndrome. 2. The dissemination of knowledge about the mask-mouth syndrome in the form of scientific publications.

Materials and methods:

Sixteen English-language works covering articles in the field of medicine and life sciences were analyzed from online databases and (Pub Med, Science Direct, Research Gate, Google Scholar).

Results:

Mask-mouth syndrome occurs due to long-term wearing of a protective face mask combined with poor oral hygiene. The use of a protective mask on the face makes it necessary to breathe through the mouth, which leads to the feeling of dryness of the mucous membranes in the respondents. In the available publications, no surface dehydration and a decrease in the flow rate of saliva in the oral cavity were found. The studies conducted so far in the world are ambiguous and undoubtedly should be continued.

Conclusion:

The meta-analysis of studies has shown that wearing masks by people contributes to the deterioration of the condition of their oral cavity or to the intensification of existing diseases in it. As research shows, the respondents paid particular attention to the fact that as a result of using protective masks, they felt a significant deterioration in breath freshness, an increase in the feeling of dry mouth, sometimes they also indicated a greater susceptibility to mucosal ulceration and bleeding gums. The exploratory analysis also showed that long-term wearing of masks may be associated with oral fungal infections and gingivitis.

Title: Hypericum perforatum in depressive disorders

Authors: Paulina Mucha

Affiliations: Students Research Club of Medical Biology, Department of Medical Biology and Biochemistry, Faculty of Medicine, Ludwik Rydygier Collegium Medicum in Bydgoszcz Nicolaus Copernicus University in Toruń

Presenting author: Paulina Mucha

Health Sciences

Profession: Student

Oral presentation/ Review

Introduction:

Hypericum perforatum, also known as St. John's Wort, is found all over the world and is often cited as one of the best-known and top-selling plant. In pharmacies, it can be found in the form of a dry extract, most often sold as capsules or tablets. Hypericum perforatum is a herbal remedy that has been used for centuries to treat a variety of ailments. The use of St. John's Wort in regulating emotional disorders is particularly noteworthy. Preparations of St. John's Wort are frequently used in the treatment of depressive disorders and have demonstrated remarkable efficacy.

Aim of the study:

In recent years, there has been growing interest in the use of St. John's Wort as an alternative treatment for depression due to its reported efficacy and low side-effect profile. This study aims to review the latest research and meta-analyses on the use of Hypericum perforatum in depression, analyze the advantages and disadvantages of its use, and compare it with registered antidepressants.

Methods:

Clinical trials and meta-analyses were reviewed, comparing the use of St. John's Wort and registered antidepressants. In addition, the interactions and side effects of St. John's Wort were also evaluated. Using the keywords [St. John's Wort; Hypericum perforatum; hypericin; depression, antidepressant, SSRI, TCA, interactions, serotonergic effect], a preliminary search was conducted on PubMed, Google Scholar, Elsevier, and Springer Link. All analyzed papers were published between 2000 and 2022.

Results:

Various systematic reviews of studies confirm that Hypericum perforatum shows better results in the treatment of patients with mild depression compared to placebo, and there is no significant difference compared to well-known antidepressants. The mechanism of St. John's Wort's antidepressant effect appears to be similar to that of standard antidepressants. Furthermore, it should be noted that St. John's Wort may interact with certain medications and induce a serotonergic effect. This fact should always be considered during analysis.

Conclusion:

In patients with depression, St. John's Wort demonstrated comparable remission, lower discontinuation rates, and fewer side effects compared to standard antidepressants. Although research results are encouraging, there are only a limited number of available case reports and frequent use of unblinded studies at the moment. In addition, Hypericum perforatum preparations contain varying amounts of active substances, making it difficult to compare results between studies. Therefore, more research is necessary to better understand its effectiveness and safety.

Title: EV-Associated MicroRNAs in Head and Neck Squamous Cell Carcinoma

Authors: Michail Koutentakis
Affiliations: Chair and Department of Biochemistry, Medical University of Warsaw, Warsaw, Poland

Presenting author: Michail Koutentakis
Health Sciences
Profession: Student
Oral presentation/Review

Introduction:
Head and neck squamous cell carcinoma (HNSCC) is a malignant neoplasm arising from the epithelial cells lining the oral cavity, pharynx, and larynx. Given its high prevalence and associated morbidity and mortality rates worldwide, this malignancy poses a significant public health challenge. Early diagnosis and reliable biomarkers for predicting treatment outcomes are essential for improving survival rates. In this context, extracellular vesicles (EVs) are membranous vesicles released by cells into the extracellular matrix that carry important signaling molecules, including microRNAs (miRNAs). MiRNAs are a class of small non-coding RNA molecules that play a pivotal regulatory role in a broad variety of biological processes, including EV-mediated cell-to-cell interactions. Recently, miRNAs in EVs have been suggested as potential biomarkers for the diagnosis and prognosis of HNSCC.
Aim of the Study/Purpose:
In this review, we aimed to investigate the role and clinical significance of EV-associated miRNAs in HNSCC and identify EV-related miRNA candidates of HNSCC biomarkers.
Materials and Methods:
We reviewed the literature by searching three major databases PubMed, Embase, and Web of Science. We included studies that investigated the association between EV-miRNAs and HNSCC. We excluded studies that did not report EV-miRNA data or were not published in English. Our search yielded 5 articles, of which all 5 met our inclusion criteria. We extracted data on EV-miRNA expression profiles and identified specific miRNAs that were consistently upregulated or downregulated in HNSCC.**Results:**
The findings of our study indicate that EV-miRNAs are promising biomarkers in HNSCC, with the potential for early diagnosis and predicting treatment outcomes. Our research also revealed that different miRNAs in EVs, such as miR-125b-5p and miR-221 play a vital role in EV-mediated cell-to-cell interactions. These miRNAs can either promote or inhibit tumor growth. Our study highlights the importance of EV-miRNAs as a disease biomarker and provides insights into the potential use of EV-miRNAs for HNSCC diagnosis and treatment evaluation.
Conclusions:
In conclusion, this investigation provides evidence that EV-associated miRNAs have the potential as biomarkers for HNSCC diagnosis and treatment evaluation. The identified miRNAs can be used as indicators for early detection and predicting treatment outcomes. Furthermore, this study highlights the role of miRNAs in EV-mediated cell-to-cell interactions and their contribution to HNSCC development, as well as emphasizes the importance of further research on EV-miRNAs and their clinical application in HNSCC management.

Title: Probiotics in depressive disorders

Authors: Dominika Choińska
Affiliations: SKN Geriatrii CM UMK

Presenting author: Dominika Choińska
Health Sciences
Profession: Student
Poster/ Oral presentation/ Review

Introduction:
Depression is a growing health and social problem. It is estimated that approximately 1.2 million people suffer from depression in Poland. Health and social consequences of depression compel researchers to search causes of this disease entity, new ones appear concepts of pathogenesis and treatment. The growing interest in the gut microbiome and the mechanisms of its interaction with the brain has contributed to the fact that much attention is being paid to the potential use of probiotics in the prevention and treatment of depressive disorders.
The aim of the study:
The aim of the work is to summarize the current research on the idea of enriching the standard therapy received with specific strains of probiotic bacteria. Material and methods: This review discusses the up-to-date findings in preclinical and clinical trials regarding the use of probiotics in depressive disorders.
Materials and methods:
This review discusses the up-to-date findings in preclinical and clinical trials regarding the use of probiotics in depressive disorders.
Results:
It has been observed that taking a probiotic during standard therapy can support the patient's cognitive functions, reduce the level of cortisol in the urine and improve sleep. Moreover, certain clinical studies have indicated improvement in mood.
Conclusion:
The findings from observational studies suggest that there is modest benefit of probiotic in reducing the symptoms of depression relative to placebo.

Title: Pharmacotherapy of corneal graft rejection in elderly patients

Authors: Daria Ziemińska, Karina Motolko, Rafał Burczyk
Affiliations: Student Science Club of Geriatrics, Collegium Medicum im. Ludwika Rydygiera in Bydgoszcz
University Nicolaus Copernicus in Toruń

Presenting author: Daria Ziemińska
Health Sciences
Profession: Student
Oral presentation/ Review

Introduction:
Corneal transplantation is one of the most popular surgical procedures. To improve outcomes in this procedure, effective prevention and treatment of graft rejection are essential. Also geriatric population is a very specific group of patients, due to their frequent multimorbidity and large number of drugs taken.

The aim of the study:
The aim of the study was to demonstrate possible ways of treatment the corneal graft rejection in elderly patients.

Materials and methods:
We searched electronic databases: Google Scholar, Pubmed. We focused on the papers from 2005-2022, in english and in polish.

Results:
Based on the available literature, the following types of transplant rejection can be distinguished: primary graft failure, immunological rejection, specific causes of laminar keratoplasty failure. Plaque keratoplasty, deep anterior lamellar keratoplasty (DALK) and Descemet membrane endothelial keratoplasty (DMEK) have significantly less risk of graft rejection compared with penetrating keratoplasty. Due to a shortage of corneal grafts donors, there has been a dynamic development of bioengineering - acellular porcine corneal stroma (APCS) became a good solution here. The most common treatments of corneal graft rejection are corticosteroids and cyclosporine A. However, there was a high rate of graft rejection and multiple treatment side effects. New direction of immunosuppression in this case is tacrolimus. Now, more preferred is topical treatment, such as topical tacrolimus. This is extremely important, especially in seniors, because of higher risk of infections or malignant tumors during immunosuppression.

Conclusion:
Elderly patients are a group particularly vulnerable to the side effects of pharmacotherapy used in the case of transplant rejection. Due to the frequent multimorbidity resulting in the use of multiple drugs and polypharmacy, the risk of drug-drug interactions is also higher. For this reason, non-traditional methods of preventing rejection of corneal grafts are sought, such as therapeutic keratoplasty using acellularized grafts of cryopreserved cornea.

Online Session

Title: Bilateral Nephroblastoma: An incidental finding

Authors: Lasha Chkhikvadze, Elisabed Chikobava, Giorgi Pkhakadze, Keti Menabde

Affiliations: Faculty of Medicine, Tbilisi State Medical University, Tbilisi, GEO

Presenting author: Lasha Chkhikvadze

Medical Sciences

Profession: Student

Oral presentation/ Case Study

Background:

Nephroblastoma (Wilms tumor) is the most common renal malignancy in children aged 2-5, accounting for 5% of all childhood malignancies. The risk of developing Wilms tumor varies among ethnic groups, with a greater risk in African Americans and a lower risk in Asians. Unfortunately, no data is available about Wilms Tumor's prevalence in Georgia. However, the incidence of Nephroblastoma in Caucasians in 2014-18 was as low as 5.3 cases per million children under 15. The exact etiology of nephroblastoma remains unknown, but it is associated with WT1 and WT2 gene mutations. Nephroblastoma should be suspected in a toddler with a non-tender abdominal mass and is rarely associated with hematuria and hypertension. Most patients have a solitary Wilms tumor, 5-7% percent have bilateral kidney involvement, and 10% have multifocal loci within a single kidney. Nephroblastoma has a good prognosis: survival rates >90%. We report a rare case of multifocal, bilateral nephroblastoma.

Case Study:

A 3-year-old Caucasian male was noted to have a palpable mass on the left upper quadrant of the abdomen on a routine well-care checkup. The patient was completely asymptomatic. His past medical, birth, developmental, and family histories along with a review of systems, general physical examination, and vital signs were insignificant. A routine laboratory and biochemical tests were also uneventful. Ultrasound showed multiple growths in both kidneys. A thoracoabdominal CT scan revealed one ovoid-shaped, hypodense renal mass in the right and five similar masses in the left kidney. With a maximum size of 5.4x4.2 cm. A puncture biopsy was done which revealed blastematous tissue with differentiated glomerular structures associated with mesenchymal tissue and tubules. Immunohistochemistry was CD56 and Ki67 positive. These findings concluded the final diagnosis of Stage V nephroblastoma. The initial CT scan excluded pulmonary involvement, the most common site of metastasis. Whole exome sequencing detected no abnormalities. Since tumor sizes were big for nephron-sparing surgery, it was decided to start chemotherapy with UMBRELLA Protocol - SIOP 2016. The IV chemotherapy course includes Vincristine 1.3 mg (2 mg/m2) and Dactinomycin 675 mcg (45 mcg/kg). Along with Antiemetics and antifungals as needed. After completing 6 courses of chemotherapy a control CT was performed, which showed partial remission with significant shrinkage of tumor masses, with a maximum size of 1.9x1.4 cm. However, it still was not operable and chemotherapy was continued. After 6 additional chemotherapy courses and control imaging, further management will be decided accordingly.

Conclusion:

We believe this rare case is of paramount importance to report as an experience of diagnostic challenges in the handling of an incidentally found abdominal mass, which may serve as a template for the management of other such patients. This case once more emphasizes the importance of thorough physical examination on routine well-child visits.

Title: The impact of the covid-19 pandemic on the head and neck tumour staging

Authors: Lauma Kalnkambere, Valērija Garaščenko, Krista Belija, Agris Timofejevs
Affiliations: University of Latvia, Riga, Latvia

Presenting author: Lauma Kalnkambere
Health Sciences
Profession: Student
Oral presentation/ Case Study

Introduction:
Childhood disintegrative disorder (CDD), or Heller's syndrome is a rare condition which usually starts in children older than 3 years. CDD is one of the pervasive developmental disorders (PDDs) and is manifested by persistent delayed development in emotional, motor, communication skills and social function. It is similar to the better known autism disorder.

Case report:
6 year old girl developed speech impairment in 2020, and was admitted to children neurologist. EEG revealed 90% epileptoform activity in her brain. Depakine was prescribed and acivity decreased to 50% which later remained unchanged. Diagnosis of epileptic and developmental encephalopathy with CSWS was established, but with no history of seizures. Depakine later got replaced with levotiracetam. Her condition worsened and risperidone was prescribed.
MRI revealed congenital arachnoid cyst in the anteromedial part of the right parietal lobe, but without structural changes in the brain. Patient attended audiologist and her condition improved until september 2021, when she suddenly developed hysterical, provocative, anxious behaviour and fear. Since then her psyhotic episodes and mood swings worsened.
From january 2022 her development regressed, including behavioural, self care and speech impairment, spontaneous defecation and urination episodes were observed. Patient lost interest in her favourite activities, forgot letters and numbers. Initially after using risperidone her condition improved, but later psyhotic episodes re-occurred.
In 2020 patient had 2 episodes of streptococcal angina, for this reason autoimmune encephalitis cannot be excluded and i/v immunoglobulin therapy was initiated in February 2022. After therapy behaviour slightly improved, but developmental delay remained. Genetic analysis revealed changes in RORB gene, which is classified as reliably pathogenic.

Conclusion:
Considering late onset age of autism with organically changed CNS background, negative speech development, stereotypical behaviour, mental retardation, intellectual delay and specific learning disabilities , CDD or Heller’s syndrome is suspected.

Title: Bilateral Nephroblastoma: An incidental finding

Authors: Jekaterina Manuhina[1], Rita Smolova[2], Kaspars Vaivods[2]

Affiliations: [1] Rīga Stradiņš University, Faculty of Medicine, Riga, Latvia;

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Presenting author: Jekaterina Manuhina

Medical Sciences

Profession: Student

Oral presentation/ Case Study

Background:

Pseudocysts of the pancreas are not rare, but spontaneous perforation and/or fistulization occurs in fewer than 3% of these patients. Pancreatic pseudocyst fistulisation into portal vein and further bleeding into duodenum is associated with life-threatening bleeding.

Case Study:

A 58-year-old man re-entered the Department of Internal Diseases with anemia. A week ago, he was discharged from the Department of Surgery, where he was treated from episodes of bleeding from the gastrointestinal tract. CT – chronic pancreatitis without visible cystic changes, previous CT a year ago – huge pancreatic cyst. OGD - anemia, erosive duodenopathy, erosive gastropathy, Forrest III. Bleeding episodes did not recur, anemia was compensated, and the patient was discharged at that time. A week later - recurrent bleeding episode. The patient suddenly developed symptoms of back and abdominal pain and massive bleeding episodes from upper GI, leading to biological death few hours later. An autopsy revealed that the patient had developed a fistula between the pancreatic pseudocyst`s “pseudowall” in a portal vein, which drained through the pseudocyst into pancreatic duct, and after into duodenum. Massive bleeding in the gastrointestinal tract started from the fistula and the patient died.

Conclusion:

In this case report, we present the case of a patient with obscure GI bleeding with no signs of upper GI or intraductal bleeding during OGD, but later fatal bleeding from a pancreatic pseudocyst that had formed a fistula through vena porta. PP-PV is a rare but highly morbid condition, presenting challenges in diagnosis and treatment, so patients with pseudocyst-portal vein fistula must be evaluated on an individual basis and the imaging findings are particularly important in surgical planning. The complication is uncommon, but should be included into differential diagnosis of recurrent intestinal bleeding.

Title: Comparision of 2 cases - with and without Intraoperative Intercostal Nerves cryoablation for Acute Pain Management in Pectus excavatum repair

Authors: Michał Matecki

Affiliations: Studenckie Koło Naukowe przy Oddziale Klinicznym Chirurgii i Urologii Dziecięcej, Wydział Lekarski, Uniwersytet Warmińsko-Mazurski w Olsztynie

Presenting author: Michał Matecki

Medical Sciences

Profession: Student

Oral presentation/Case Study

Background:

Pectus excavatum is a congenital chest wall abnormality characterized by a posterior depression of the sternum, which affects males more commonly than females and has a prevalence of one in a thousand children. Symptoms can include chest discomfort, tachycardia, and exercise intolerance. The Nuss technique is a minimally invasive surgical procedure used to correct the defect, but it can lead to severe postoperative pain that often requires the administration of potent analgesics, including opioids or epidural anesthesia. Fortunately, intraoperative cryolysis of the intercostal nerves can alleviate postoperative pain and reduce the need for analgesic medications.

Case report:

15-year-old Patient with pectus excavatum was admitted to the hospital for thoracoplasty of the anterior chest wall using the Nuss procedure. In order to push the chest into a normal position, two curved metal bars were inserted behind the sternum. Elevation of the sternum was performed.. Postoperative pain management on the first day included paracetamol and ropivacaine in epidural, second day paracetamol, metamizole, morphine ropivacaine in epidural. On the third day paracetamol, metamizole, ketoprofen and ropivacaine in epidural was administered on the fourth day only paracetamol, metamisole, ketoprofen were used. On the fifth day after the operation, the patient was discharged. Second patient, a 17-year-old with pectus excavatum was admitted to the hospital and underwent but Intraoperative Intercostal Nerves cryoablation was performed. Postoperative pain management on the first day included paracetamol and metamizole. On the second day of hospitalization, the patient needed paracetamol, metamizole and nalbufine, and on the third day paracetamol, metamizol. No epidural was required. On the third day after the operation, the patient was discharged.

Conclusion:

Cryolysis of the intercostal nerves during the Nuss procedure is a highly effective method of managing acute postoperative pain compared to the standard multimodal analgesia approach. This technique significantly reduces the need for opioid or epidural anesthesia usage and results in shorter hospitalization times. By implementing intraoperative intercostal nerves cryolysis, patients can experience improved pain management and faster recovery time.

Title: High effective in vitro anticancer effect of montmorillonite-cytochrome c mineral-protein composite nanoparticles

Authors: Trifon T. Popov[1], Svetlana H. Hristova[2], Alexandar M. Zhivkov[3]

Affiliations: [1]Student of Medicine, Medical Faculty, Medical University – Sofia, Sofia, Bulgaria

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Presenting author: Trifon T. Popov

Medical Sciences

Profession: Student

Oral presentation/Online Session

Introduction:

In cancer cells apoptosis (programmed cell death) is blocked due to the inability of their mitochondria to release cytC. For this reason, apoptosis can be induced by the introduction of exogenous cytC, using the capability of the tumor cells to phagocytize extracellular colloid particles with submicron size on which cytC is previously adsorbed. Therefore, we use the mineral montmorillonite (MM), which has been approved for use in human medicine. MM monoplates are used as drug delivery systems, as they have a high adsorption capacity owing to their huge size/thickness ratio. The inability of the normal cells (with the exception of macrophages and neutrophils) to phagocyte colloid particles protects them and determines selectivity of the composite cytC-MM nanoparticles.

Aim:

To investigate the cytotoxicity and the physicochemical properties of cytC-MM nanoparticles as a function of cytC concentration in the suspension.

Methods:

Microelectrophoresis, static and electric light scattering were used to determine the electrophoretic mobility, mass increment of MM monoplates at cytC adsorption, adsorbed/free ratio, number of adsorbed cytC globules per one MM monoplate, concentration of cytC-MM composite particles. Futhermore, we tested the cytotoxic effect of cytC-MM on colon cancer cell culture.

Results:

CytC solution and MM suspension had no effect on the cancer cells. In contrast, the composite cytC-MM nanoparticles killed 97% of the cells after 96 h treatment. Interestingly, the cytotoxicity was found to depend nonlinearly on the concentration of cytC in the cytC-MM suspension, but linearly on the logarithm of this concentration.

Conclusion:

The in vitro experiments demonstrate that cytC-MM composite nanoparticles have potential application in anticancer treatment of superficial neoplasms of the skin and the gastro-intestinal system (oral cavity, esophagus, stomach and colon).

Title: Differential diagnoses in patient with suspected heller syndrome

Authors: Lauma Kalnkambere[1], Laura Ķevere[2]
Affiliations: [1] University of Latvia, Riga, Latvia,
[2] Clinic of Pediatric Psychiatry, Riga, Latvia
Presenting author: Lauma Kalnkambere
Health Sciences
Profession: Student
Oral presentation

Introduction:
The COVID-19 pandemic has had a significant impact on healthcare, both globally and in Latvia. During the pandemic crisis, millions of people had to postpone or cancel necessary healthcare procedures in order to maintain capacity for COVID-19 patients and avoid infections. Recent evidence suggests that the delay in seeking out and receiving healthcare may have worsened many patients health status.

Methods:
In a retrospective study demographic, clinical and hystological tumour characteristics of 179 patients with primary head and neck cancer who was diagnosed and treated in november and december in 2019 and 2020 (during covid-19 pandemic) were analyzed. Excel and SPSS version 22 were used to analyse data. Analysis included histological tumor types, early and late clinical T stage and clinical N, M stages, time from symptom onset to diagnosis, and time from diagnosis to surgery.

Aim:
The aim of the study was to identify whether the COVID-19 pandemic had an impact on the stage and operability of HNC patients.

Results:
A total of 179 patients met the inclusion criteria for this study. There were a total of 103 (57,5%) men and 76 (42,5%) women included. The mean age in each of the groups were 66,64 years, SD=14,35 in the control group and 62,77 years, SD=14,91 in the study group. The mean time from initial symptoms to diagnosis was 14,98 months, SD= 25,02 in the control group and 10,17 months, SD= 16,42 in the study group. Time from admission to surgery was 1,42 months, SD= 0,84 and 1,35 months, SD= 1,25 in the control group and study group. There were 56 early T stages and 16 late T stages in control group, and 58 early, and 13 late T stages in study group. In the control group was 79 operable and 10 non-operable tumours but the study group had 83 operable and 7 non-operable tumours.

Conclusion:
This study does not prove the hypothesis. Time from symptoms to diagnosis is longer in 2019 than in 2020 and time from diagnosis to surgery is not statistically significantly different between the two groups. There is higher number of non-operable tumours and late T stages in 2019 than in 2020. Due to the limited duration and size of the study, it would be necessary to include more patients and choose a longer time period.

Title: Study on Vascular diseases among the mid aged population in the selected area of old Dhaka city, Bangladesh

Authors: Ashish Paul

Affiliations: Resident Medical Officer, Department of Critical Care Medicine,
Monowara Hospital Private Limited, Dhaka, Bangladesh.

Presenting author: Ashish Paul

Medical Sciences

Profession: PhD Student Resident Medical Officer

Oral presentation

Introduction:

Vascular diseases among the mid aged population are influenced by various types of risk factors like high blood pressure, diabetes mellitus, hyperlipidaemia, blood glucose level, elevated serum cholesterol, smoking, alcohol, sedentary lifestyle, body weight and obesity etc. Like other countries, vascular diseases prevalence is rising among the mid aged adults in old Dhaka city, Bangladesh.

Aim of the study:

Our aim was to detect the vascular diseases with risk factors among the mid aged population in the selected area of old Dhaka city, Bangladesh.

Materials and methods:

To study about the vascular risk factors among the mid aged population this (cross sectional) study was conducted on 210 subjects by convenient sampling method among the people of 35 years to 65 years of age in old Dhaka City, Bangladesh during the period of March 2022 to October 2022. Data was analyzed by computer with SPSS program version 25.

Results:

This study included 43.3% male and 54.77% female with an age range of 35 to 65 years. Among them 22.2% were in (45-50) years of age group. Most of the study subjects were married and 60.1% of study subjects were found to have completed graduation. 34% of the study subjects were businessmen. 24.6% of respondents had high blood pressure, 17.2% had diabetes mellitus and 11.9% had both high blood pressure and diabetes mellitus. 16.2% respondent's siblings and 26.6% respondent's parents had diabetes mellitus, 16.2% respondent's siblings and 19.77% respondent's parents had high blood pressure and 21.6% respondent's siblings and 21.7% respondent's parents had both high blood pressure and diabetes mellitus. According to the exercise habit of respondents, 26.1% were regularly doing exercise and 36.5% were irregular in their exercise. Among the study subjects, 19.7% were smokers and 79.8% were non-smoker. 11.8% of respondents had the habit of alcohol consumption. Among them 3.4% were regularly drinking alcohol, 8.4% were irregular and 88.2% didn't drink alcohol. 11.3% of respondents had the habit of tobacco consumption and 88.7% had not the habit. 65% respondents were taking medication for various diseases but 35% did not take any medication. 69% responding were hypertensive and their blood pressure was above the normal value. According to BMI, 47.7% were among the overweight group. 18.27% were in obesity class I, 3.4 % were in obesity Class- II and 1.4% were non diabetic and 9.8% were diabetic, According to lipid profile, 69% respondents had high level of cholesterol , 1% had cleaved HDL level , 7.4% and 3% had high and very high LDL level, 16-7% and 1.5% had high and very high triglyceride levels.

Conclusion:

Prevalence of vascular diseases were alarmingly high in old Dhaka city. Lifestyle factors and family history were found to be very prominent and determining. Lifestyle should be modified for preventing the vascular diseases.

Poster Session

Title: General anesthetic management of patient with low ejection fraction, severe mitral valve regurgitation, recent chronic cardiac exacerbation for endoprosthetic surgery for periprosthetic fracture of the femur

Authors: Hai Ying Sung, Michalina Kołodziejczak, Maria Klunder, Artur Cieśliński, Przemysław Jasiewicz
Affiliations: Department of Anesthesiology and Intensive Care, Collegium Medicum Bydgoszcz, Nicolaus Copernicus University Torun, Antoni Jurasz University Hospital No.1, Bydgoszcz, Poland

Presenting author: Hai Ying Sung
Medical Sciences
Profession: Student
Poster/ Case Study

Background:
With the development of medical care and the aging of the population, we have an increasing number of patients burdened with advanced cardiovascular diseases. These patients with considerable fragility are also often prone to fractures, particularly of the femur. Treatment of such fractures requires a very personalized approach, due to numerous comorbidities, medications, and the risk of surgery and anesthesia. Without surgical intervention, there is a substantial risk that the fractured bone would not fuse, which could lead to pneumonia and death. Taking into account the risk of the procedure, the anesthesiologist is required to adopt the most optimal and personalized approach to ensure perioperative safety and effective discharge home.

Case report:
A 88-year-old female presented with a periprosthetic fracture of the femur after a fall during at-home activities and was qualified to endoprosthetic surgery. She was consulted by a cardiologist to optimize her cardiovascular status prior to the surgery and anesthesia. Patient showed signs of dehydration with a blood pressure of 89/58 mmHg and with a history of persistent atrial fibrillation, anterior wall MI with stent implantation 15 years ago and NYHA III. The most recent echocardiography reported enlargement of both atria, left ventricular muscle thickness within normal limits, increased RVSP, significant mitral regurgitation, spontaneous contrast in the lumen of the left ventricle, significant left ventricular systolic function impairment, right ventricular systolic dysfunction and second degree diastolic dysfunction, EF-18-20%. Laboratory tests revealed the following abnormalities: NT-proBNP 11940ng/L, TSH 8.11qlU/ml, K+ 3.1mmol/l, Tnl 126ng/L. Three weeks prior, she had a chronic cardiac exacerbation to NYHA IV managed pharmacologically, declining invasive diagnostics and treatment. There were no absolute cardiac contraindications for surgery, the procedure was considered as high risk, due to compromised cardiac condition and age.
Upon arriving at OR, the patient was alert and agitated. Induction of general anesthesia with fentanyl, hypnomidate and cisatracurium. Ephedrine was used to stabilize patient's BP for the time of establishing central line and arterial line accesses, noradrenaline and dobutamine infusions were introduced to a central line. Patient received dexaven 4mg, 15% mannitol 100ml and one unit of blood (HBG 7.8 g/dL, entry ABG). After the surgery, she was transported to the post-op department, where she was extubated, pressors were reduced and discontinued 4 hours later, before transfer to the orthopedic department. Two days post-OP the patient was recovering well and was being prepared for the hospital discharge.

Conclusion:
Anesthesia of fragile patients with cardiac conditions for urgent orthopedic procedures can be safely performed after appropriate preparation of the patient and the anesthesia plan.

Title: The small change with hope for a better standard of living. The use of the Chait Trapdoor catheter in the treatment of Hirschsprung's disease - case report

Authors: Laura Bursztynowicz, Paulina Hnatuśko, Wiktoria Kozłowska

Affiliations: [1]1st Clinical Department of General and Endocrine Surgery, Medical University of Bialystok, Poland

[2] Students' Scientific Society at the 1st Clinical Department of General and Endocrine Surgery, Medical University of Bialystok, Poland

Presenting author: Laura Bursztynowicz

Medical Sciences

Profession: Student

Poster/ Case Study

Background:

Hirschsprung's disease is a developmental disorder of the enteric nervous system, characterized by the absence of ganglion cells in the intestinal myenteric plexuses and submucosa of the distal part of the intestine. This results in a lack of peristalsis in the involved intestine and the development of its functional obstruction. The etiopathogenic pathways are not fully known, but studies have unveiled parts of the embryonic development. The most characteristic factor involved in the etiopathology is the neural crest disorder.This congenital disease is rarely detected in adults, mostly diagnosed in the neonatal period. The case report aims to present a method to improve the quality of life of adult patients with Hirschsprung's disease.

Case Study:

In 2022, a 27-year-old patient presented to the Clinic for catheter replacement for a cecostomy. During his childhood, the patient was diagnosed with Hirschsprung's disease and underwent a series of surgeries including resection of a 12-centimeter segment of the colon and a colostomy. At a later stage of treatment, the continuity of the gastrointestinal tract was restored. However, due to the patient's reported postoperative constipation, it was decided to emerge a cecostomy. Initially, a Foley catheter was used to flush the bowel, which was inconvenient for the man. In 2018, a new solution was proposed - a Chait Trapdoor catheter, which was finally inserted in 2019. Currently, the patient reports no worrisome complaints. Defecation occurs by the natural route, and in addition, every 2-3 days the man flushes his bowel saline directly through the catheter.

Conclusion:

The insertion of a cecostomy catheter facilitates the cleansing of the colon at regular intervals, which prevents fecal accumulation and fecal incontinence. The case demonstrates the benefits of using the specified catheter model as an effective and convenient for daily use.

Title: Mutagenicity analysis of clinically used diuretics

Authors: Jagoda Jetke; Monika Hoffa; Dominika Lewandowska; Adrian Warczak; Łukasz Fijałkowski; Alicja Nowaczyk
Affiliations: Department of Organic Chemistry, Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University

Presenting author: Jagoda Jetke
Pharmaceutical Sciences
Profession: Student
Poster

Introduction:
The challenge of modern pharmacology is the evaluation of drugs that interfere with the tissues affected by the disease, and at the same time are safe for other body structures [1]. Considering the currently highest incidence of cancer, any assessment of the mutagenic potential of a drug seems highly justified and desirable. The subject of research on the mutagenic potential are diuretics (diuretics) used mainly in the treatment of hypertension, heart failure and chronic kidney disease. Several classes of diuretics currently available in clinical practice have become the preferred therapy for cardiovascular and non-cardiac diseases [2,3]. Due to the extension of therapeutic indications of diuretics, the assessment of the carcinogenicity of the tested group of compounds has not only a cognitive, but also a practical aspect.
Aim: The aim of the study is to assess the mutagenic potential of clinically used diuretics.
Material and methods:
The subject of the study is a group of 41 diuretics currently used in medicine. The evaluation of the mutagenic potential has been analysed. The research was carried out using computational methods. The following software packages were used: Chemsketch, pkCSM, DataWarrior.
Results:
Hydroflumethiazide, hydrochlorothiazide, trichlormethiazide, methylclothiazide, theobromine, tolvaptan, conivaptan have been shown to have a high mutagenic potential.
Conclusion:
The obtained data indicate that approximately 17% of clinically used diuretics are potentially mutagenic drugs. It seems that this is a very important therapeutic issue in the chronic use of these drugs. For this reason, when planning pharmacotherapy, attention should be paid to the available results of diagnostic tests for hydroflumethiazide, hydrochlorothiazide, trichlormethiazide, methylthiazide, theobromine, tolvaptan, conivaptan for cancer.

Key words: diuretics, AMES test, mutagenic potential, cancer
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Title: Per os bioavailability analysis based on Veber's rule of selected calcium channel antagonists

Authors: Monika Hoffa, Jagoda Jetke, Dominika Lewandowska, Adrian Warczak, Łukasz Fijałkowski, Alicja Nowaczyk
Affiliations: Department of Organic Chemistry, Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University

Presenting author: Monika Hoffa
Pharmaceutical Sciences
Profession: Student
Poster

Introduction:
Bioavailability is highly multifactorial, but depends primarily on absorption in the gastrointestinal tract [1]. A prognostic criterion that evaluates the bioavailability of per os therapeutic agents is Veber's rule. The study is conducted in the 4D physicochemical space of parameters such as: MW (molecular weight), RTB (number of rotational bonds), HDA (sum of hydrogen bond donors and acceptors), PSA (polar surface area of the molecule). In addition to pharmacodynamic efficacy, many therapeutic difficulties result directly from poor pharmacokinetics and bioavailability of the drug. While there are various routes of drug administration, oral administration is preferred for reasons of patient comfort and compliance. The subject of research are calcium channel blockers (CCB). Currently, they are used in the treatment of many cardiovascular disorders: arrhythmia, ischemic heart disease, angina pectoris and others [2]. Currently, combination formulations of CCBs with angiotensin-converting enzyme inhibitors, sartans or beta-blockers are used in the treatment of hypertension. Since CCBs are mainly administered per os it seems interesting to evaluate their bioavailability profile [3,4].
Aim: The aim of the study is to assess oral bioavailability of selected calcium channel antagonists using Veber's rule.
Material and methods:
The subject of the study was 25 currently clinically used CCBs. The research was based on in silico methods using the software package: OSIRIS DataWarrior. The 4D space of Veber physicochemical parameters of selected calcium channel antagonists was analyzed.
Results:
Among the studied CCBs, 4 drugs (gallopamil, lercanidipine, mibefradil, verapamil) turned out to be non-compliant with Veber's rule. This is the result of the high structural flexibility of CCB molecules. This is determined by the high number of bonds undergoing rotation in relation to the value required by the rule (RTB < 10).
Conclusion:
Most of the tested CCBs (approx. 84%) meet Veber's rule, which proves their good oral bioavailability.
Key words: calcium channel blockers, Veber's rule, bioavailability

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Title: Assessment of the potential of PPIs in causing endocrine disruption by binding nuclear receptors

Authors: Natalia Kubryń, Adrianna Witczyńska, Łukasz Fijałkowski, Alicja Nowaczyk

Affiliations: [1]Department of Organic Chemistry, Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń

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Presenting author: Natalia Kubryń

Pharmaceutical Sciences

Profession: One year after graduation

Poster

Introduction:

Proton pump inhibitors (PPIs) are the group of drugs most often used to reduce overproduction of stomach acid. One of the most commonly prescribed drugs in the United States is omeprazole, a proton pump inhibitor. The mechanism of action of these drugs is to inhibit approximately 70% of H^+/K^+ ATPase. PPIs are used for conditions such as: gastroesophageal reflux disease, Zollinger-Ellison syndrome, duodenal or stomach ulcers, in combination with certain antibiotics to eradicate Helicobacter pylori, erosive esophagitis.

Aim: The aim of the study is to assess the potential of endocrine disorders of PPIs using Computer-Aided Drug Design methods.

Material and methods:

The research have been conducted applying various computer systems and programs such as pkCSM, Endocrine Disruptone, Tanimoto and admetSar. The ability of proton pump inhibitors to bind nuclear receptors was analyzed

Results:

Significant differences in the binding capacity of selected nuclear receptors between drugs from the PPI group have been demonstrated.

Conclusion:

The tested compounds were characterized by different values of nuclear receptor binding capacity. Which translates into a different probability of endocrine disorders. There is a need for further research in this area.

Title: The assessment of bioavailability of antidysrhythmic drugs in treatment of Osteoarthritis patients using in silico methods receptors

Authors: Adrianna Witczyńska, Natalia Kubryń, Łukasz Fijałkowski, Alicja Nowaczyk
Affiliations: Department of Organic Chemistry, Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń

Presenting author: Adrianna Witczyńska
Pharmaceutical Sciences
Profession: PhD Student
Poster

Introduction:
Dysrhythmia and osteoarthritis (OA) are two chronic diseases that are unlikely to be related to one another. However, they have a lot in common, including risk factors, underlying biological causes and linkages, drug usage, and pharmacological treatment. Due to population aging and a general rise in obesity, OA, the clinical syndrome of joint pain and dysfunction brought on by joint degradation, is the most common cause of disability in older persons. Patients with an erratic heartbeat who run the danger of passing out or collapsing are diagnosed with cardiac dysrhythmia, a common heart condition. As a result, cardiac dysrhythmia frequently requires long-term pharmacological therapy that mostly consists of ion channel modulators. However, it is more probable that several cardiovascular medications will affect the articular tissues in OA.
Aim: The goal of this study is to discuss the bioavailability of medications used to treat CVD as well as their possible effects on OA development.
Material and methods:
The present research evaluates the bioavailability of antidysrhythmic drugs that may affect cartilage and subchondral bone and discusses their potential effects on the development of OA. The bioavailability of 14 antidysrhythmic drugs was examined in the present research. In silico method was utilized to retain crucial pharmacokinetic and pharmacodynamic parameters using the pkCSM, SwissADME, and AdmetSAR software, and a comparison of the pharmacokinetic values of the tested drugs in a particular activity model was completed. Graphical representations of the collected results are shown.
Most drugs in the plasma exist in equilibrium between unbound or bound serum proteins. The effectiveness of a given drug may depend on the degree of protein binding in the blood, because the more unbound proteins there are, the more efficiently the drug can cross cell membranes or diffuse. The analysis results are graphically represented by prediction model the unbound fraction in the plasma of studied drugs.
Results:
Model $PGP_{inh.}$ predicts a significant ability of the tested drugs ($P \geq 45\%$) to modulate PGP transport. This indicates that the pharmacokinetic properties of these drugs can positively affect OA therapy. The analysis of the unbound fraction of the drug in plasma shows that in the tested set most effective in OA therapy should be: captopril, enalapril and minoxidil ($F_{UB} \geq 70\%$).
Conclusion:
The conducted studies suggest that the tested antidysrhythmic drugs can influence the therapy of OA.

Title: Moclobemide and pramipexole in the treatment of severe depressive episode in bipolar affective disorder - a case report of a 67-year-old female patient

Authors: Dominika Szumilas, Aneta Kotlarek
Affiliations: Students' Scientific Group of Psychiatry, Jagiellonian University Medical College in Cracow

Presenting author: Dominika Szumilas
Medical Sciences
Profession: Student
Oral presentation/Case Study

Background:
Bipolar affective disorder is a condition characterized by two or more episodes of significant mood and activity disturbance and at least one of these episodes has to be manic or hypomanic. Depressive episodes tend to be recurrent and account for 70% of the symptomatic period in a patient's lifetime. Quetiapine, lurasidone, lamotrigine, olanzapine and lithium are used in the treatment of bipolar depression, sometimes in combination with typical antidepressants. Almost one-third of patients suffer from treatment-resistant bipolar depression (TRBD), which may be defined as failure to achieve remission in spite of treatment with adequate doses of at least two medications. A variety of pharmaceutical agents for TRBD including moclobemide and pramipexole has been studied.
Case Study:
A 67-year old female patient with type II bipolar disorder diagnosed in 1996 was admitted to the hospital due to TRBD. The main symptoms were: lowered mood, anhedonia, fatigue, loss of energy, apathy, passive suicidal ideations and worsening of cognitive functions. In the past she had experienced episodes of depression and hypomania (she suffered from bipolar disorder with depressive predominant polarity, the last hypomania was in 2018). As her illness progressed, dominance and persistence of depressive episodes was observed. Through the years she had been treated with many antidepressants, mood stabilizers, as well as electroconvulsive therapy, transcranial magnetic stimulation and ketamine, but none of the treatments was effective enough to induce or maintain remission. Before the admission the patient's treatment was: agomelatine, quetiapine, levothyroxine, omega 3 fatty acids and lithium. During the hospitalization agomelatine, quetiapine and lithium were discontinued. Moclobemide, pramipexole and celecoxib were introduced. Celecoxib was discontinued due to suboptimal therapeutic effect. After 4 weeks of treatment with moclobemide and pramipexole her mental state has significantly improved. The patient reached euthymia with optimal treatment tolerance. The main residual symptoms were cognitive dysfunctions. After discharge she remained treated in the outpatient unit. Due to observed sleep problems and slightly elevated energy level, quetiapine extended-release was added and moclobemide was gradually discontinued (after a few months of treatment). Throughout the follow-up period of around 8 months the patient has been in remission of depressive symptoms.
Conclusion:
Moclobemide is a reversible inhibitor of monoamine oxidase A and pramipexole is a dopamine D2/D3 receptor agonist. They are not routinely used for treating depression phase of bipolar affective disorder. In the presented case those agents seemed to cause overall improvement of the patient's depressive symptoms and well-being but mood stabilizer had to be added due to the emergence of a few hypomanic symptoms. Pramipexole may be a beneficial and promising treatment option in the group of patients suffering from TRBD.


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