



2022

SW MED

treating the untreatable

7th

INTERNATIONAL MEDICAL
STUDENTS' CONGRESS

**ABSTRACT
BOOK**

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ABSTRACT BOOK

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TABLE OF CONTENTS

• PREFACE	
WELCOME SPEECH	1
• ORGANIZATION	
ORGANIZING COMMITTEE	2
ADVISORY BOARD	8
AMBASSADORS	9
SPONSORS	10
• CONGRESS	
PROGRAM	12
TEAM EVENTS	13
WORKSHOPS	15
• ABSTRACTS	
ORAL SESSION I	20
ORAL SESSION II	27
ORAL SESSION III	35
POSTER SESSION Ia	43
POSTER SESSION Ib	48
POSTER SESSION II	63
• OUR FACULTY	76

PREFACE

WELCOME SPEECH

Dear SaMED 2022 Participants,

We are pleased to welcome you to the 7th Sarajevo International Medical Students' Congress. Each one of our precious members of Organising Committee represents our association and the faculty in the best possible way, through the implementation of projects from the area of medical education, public health, student activism and volunteering. We can say that organising SaMED 2022 has been a lifetime experience for all of us. 50 students were working full time on this project since November 2021 to make it all possible. After countless meetings, shared ideas and thoughts, few tears and arguments we present you everything we worked for giving you the opportunity to learn something new, meet new people and our city Sarajevo at its finest. SaMED 2022 gathers more than 250 students from the Balkan region and the world. Main topics are Oncology and Transplantation medicine which will be discussed by six international medical experts whose work made an impact on the face of medicine. Congress also includes 12 different workshops featuring the best medical experts from our beautiful country. Our dear professors, sponsors and especially our dear participants thank you for recognizing and choosing us to help you find yourselves in the incredible medical science. Since the main topic of the congress is oncology and transplantation hopefully, by the end of it, we will be closer to really treating the untreatable. We really hope that you will enjoy every single detail we dedicated to you and we can't wait to meet you all. SaMED 2022 will be the place where some amazing connections and friendships were created. Thank you for being here and besides learning medicine, don't forget to have some fun! Enjoy!

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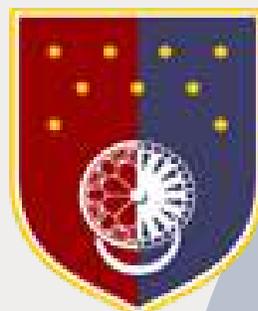
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CONGRESS PROGRAM

Thu | 22 Sept

- 19:00 Opening Ceremony
- 21:00 Social Event | Pivnica Sarajevo

Fri | 23 Sept

- 08:00 Oral Sessions 1
- 10:00 Breakfast
- 11:00 Oral Sessions 2
- 13:00 Break
- 13:30 Cancer and obesity | Dr. Gordan Srkalović
Breast cancer | Dr. Lejla Hadžikadić-Gušić
- 14:30 Break
- 15:30 Palliative care | Dr. Amra Serdarević-Memić
Skin melanoma | Dr. Vanis Dujso
Heart Transplantation | Dr. Nermir Granov
- 17:00 Break
- 17:30 Panel Discussion | New treatments in
oncology and the goals for the future
- 21:00 Social Event | Club Špica

Sat | 24 Sept

- 08:30 Workshops 1
- 11:00 Lunch Break
- 12:00 Workshops 2
- 14:00 Coffee Break
- 14:30 Artificial heart | Dr. Bojan Biočina
Liver transplantation | Dr. Deniz Balci
- 15:30 Coffee Break
- 16:00 Treating the untreatable | Dr. Rosa Gulliani
- 17:00 Lung transplantation | Dr. Tomaž Štupnik
- 17:30 Coffee Break
- 18:00 Panel Discussion | New procedures in
transplantation medicine and the future
- 21:30 Social Event | Kino Bosna

Sun | 25 Sept

- 10:00 Poster Sessions
- 13:00 Sarajevo Tour
- 18:00 Closing Ceremony

CONGRESS

THEME EVENTS

Theme event 1: "Treating the Untreatable – New methods of treatment in the oncology"

Cancer is a disease caused when cells divide uncontrollably and spread into surrounding tissues. It is among top ten leading causes of death in the world. People suffering from this disease quite oftenly don't have symptoms or they are very general, so in the moment of the unpleasant discovery it is quite unlikely that the treatment will help.

Great work and resources are invested in developing better methods of diagnosing cancer and treating it. Now more than ever, computer sciences are having a bigger impact on this field of medicine.

Other methods like immunotherapy are getting more and more improved each day and are being used widely among doctors as a choice of treatment. Communication with the patients can oftenly be overlooked when it comes to treatment and diagnosis, but it is also a crucial part of the patients recovery path.

A lot of our guest speakers through a series of lectures and in a very interesting panel discussion will talk about the impact that new discoveries and new methods have on the patients life span and life quality, and overall in the treatment of cancer, so make sure to visit them all during SaMED.

CONGRESS

THEME EVENTS

Theme event 2: "New procedures in transplantation field and goals for the future"

Organ transplantation is a medical procedure in which an organ is removed from one body and placed in the body of the recipient, to replace a damaged or missing organ. In order to achieve that the transplantation is successful, a lot of conditions need to be fulfilled, to name a few: the body size of both the donor and recipient need to be approximately the same, the blood types need to be compatible, in some cases antibodies as well, etc. This procedure could save many lives, but unfortunately still a lot of people die waiting for an organ.

Since there are always long waiting lists for organ transplantation and quite often transplants can be rejected by the recipients immune system, experts in this field are constantly developing new methods through which they can provide more and completely accepted organs. So now, they are working on: maintaining organs for a longer time out of the human body, xenotransplantation, stem cell-based transplantation and much more.

If you are curious about what the future of transplantation holds, you will learn a lot from leading experts of this field through lectures and a panel discussion we organised on this year's SaMED.

CONGRESS

WORKSHOPS

Workshop 1: It's going TIBIA okay!

A number of musculoskeletal conditions are managed through the application of a cast or splint to immobilize an area, diminish pain and promote healing. The ability to apply proper casts or splints to orthopedic populations is an important modality for management of many injuries.

This workshop is intended to demonstrate and then allow participants to apply simple splints using casting materials to stabilize injuries.

Workshop 2: Necesses est!

If you want to know more about necessary drugs in most common situations that you will see during your career, this workshop is made for you. Our professors will share their knowledge and give you an extra education about best solutions in urgent situations like heart attacks, epileptic seizures etc.

Also, we prepared practical part where you will learn how to apply drugs through IV line and at the end we have little competition and rewards for the best of you.

Workshop 3: Brain check

If you want to know more about interesting sides of neurology, especially about neurological exams on patient (e.g. testing reflexes of cranial and peripheral nerves, examination of motor and sensory functions) - you will find this workshop suited for you.

CONGRESS

WORKSHOPS

Workshop 4: How does it look, dr. Sloan?

The term Plastic Surgery comes from the Greek word plastike or the art of modeling or sculpting. Let us guess, that's your first association when you hear this term. What do you think about changing your mind?

In fact „modeling or sculpting“ is only a small piece of a huge puzzle named Plastic Surgery.

If you want to find other pieces, complete picture and feel like dr. Sloan through short lecture, practical part and quiz in the end, then dive with us in this artistic world.

Workshop 5: Is dr. House in da house?

If you're looking for a fun way to test your diagnostic skills and compete a little bit, this workshop is the right choice for you. Our main topic is Internal medicine, but let's practice medicine in general.

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Workshop 6: B positive

Do you want to learn more about the most precious gift one can give?

One blood donation can save up to three lives! Learn many more interesting facts from hematology and practice your blood drawing skills at our Transfusion medicine workshop!

CONGRESS

WORKSHOPS

Workshop 7: Diagnostical methods in clinical thyroid cancer research

Thyroid cancer is a fairly common occurrence in the daily work of doctors. Do you want to recognize the symptoms of thyroid cancer and diagnostic procedures in detecting it? This workshop, which is based on nuclear medicine and pathology, is the right address for you! Get acquainted with scintigraphic examinations, application of ultrasound in diagnostics and principles of pathohistology. Welcome!

Workshop 8: Spotting the sick child – cardiac arrest in outpatient settings

Assessment of children can be confusing as symptoms of various illnesses may not be as well expressed as in adults. Don't worry, we got you covered! This workshop will explore a systematic approach to a child with cardiac arrest and demonstrate skills to manage this situation. Our goal is to improve the outcome after pediatric cardiac arrest by providing adequate training.

Workshop 9: Everything you need to know about surgical suturing

Are you someone amazed by precision and moved by helping humanity? What if we told you that is possible through a process called surgical suturing. To catch a glimpse of the art that surgeons perform, join us in this workshop and bring creative and constructive spirit to your future medical practice.

CONGRESS

WORKSHOPS

Workshop 10: AMBOSS!

AMBOSS is driven by its mission to empower all doctors to provide the best possible care. It aims to serve those pursuing medicine as well as those already in the field as an extensive medical knowledge resource.

AMBOSS was founded by doctors, for doctors, in 2012. A group of young residents became frustrated by the limitations of the medical education system: the multitude of disconnected resources available led to more time spent researching topics than mastering them. They took matters into their own hands and together completely reshaped the path to becoming a physician. They created AMBOSS, a digital medical resource that could single-handedly support students in the classroom as well as later on as a clinical companion.

Today, more than a million healthcare professionals in over 180 countries rely on AMBOSS. Over 50 medical schools around the world, including the New York University School of Medicine (NYU) and Yale University, have adopted it as an essential study resource. In addition, Helios, the largest hospital group in Europe, rolled out AMBOSS as the foundational medical reference for its doctors.

CONGRESS

WORKSHOPS

Workshop 12: MedIT!

MedIT is the leading provider of IT healthcare services for public and private sector in BiH and region. It is a company that has around 50 employees that are specialized in providing IT services in the healthcare system. With their own software's they are improving the quality of healthcare making it easier for health professionals and for the patients.

ORAL SESSION I

**INTERNAL
MEDICINE,
INFECTIOUS
DISEASES,
ONCOLOGY,
PAEDIATRICS**

HPV Infection in Men

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CASE REPORT TEXT

Introduction: Although much is known about the pathophysiology of cervical human papillomavirus (HPV) infection and its sequelae, including intraepithelial neoplasia and cervical cancer, relatively little is known about the nature of anogenital HPV infection and disease in men. HPV is sexually transmitted and infects the genitals in both sexes, the cervix is biologically more susceptible to malignant transformation than the penis or anus in men.

Case description: We present a 47-year-old patient with therapy-controlled diabetes and hypertension. He underwent to percutaneous nephrolithotomy (PCNL) and bilateral ureterorenoscopy (URS) with laser lithotripsy because of bilateral kidney stones. The patient presented with gross hematuria. After cystoscopic examination, a papillary lesion suspicious of malignancy was discovered within the middle penile urethra. Clinical examination of the external genitalia was unremarkable in terms of gross abnormalities. The urethral lesion was removed by cystoscopic biopsy and submitted for histopathological examination. In-situ hybridization (ISH) was positive for HPV-6 and negative for HPV-16. Histological characteristics and molecular studies showed that it is an acuminate condyloma of the penile urethra.

Discussion: Human papillomavirus (HPV) infections cause a range of clinical conditions, depending on the causative agent of HPV and the characteristics of the infected host. Condyloma acuminatum is an anogenital lesion caused by human papillomavirus infection. It is a sexually transmitted disease, highly infectious, with an approximate transmission rate of more than 60%. It usually involves the external genitalia.

Conclusion: The consequences of anogenital HPV infection in men must be measured in terms of their ability to spread HPV infection to their sexual partners, as well as their direct consequences on target organs in the form of lesions, including progression to cancer. Prophylactic HPV vaccination of men is necessary because the success of the HPV vaccine in women is currently attributed more than ever to the "male factor".

Keywords: HPV, vaccination, condyloma acuminatum

Renal artery thrombosis secondary to Covid-19 infection

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CASE REPORT TEXT

Introduction: COVID-19 is associated with a hypercoagulable state and a high rate of clinical thrombosis due to excessive inflammation, platelet activation, endothelial dysfunction, and stasis. Both microvascular thrombosis, causing small vessel occlusion, and macrovascular thrombosis are common, and thromboembolic events occur in both the arterial and venous systems. In the medical literature, a limited number of articles describe renal artery thrombosis. We report a rare case of renal artery thrombosis with renal infarction due to Coronavirus disease -2019.

Case description: 45-year-old man was admitted to the medical intensive care unit because of Covid-19 pneumonia. His initial laboratory test revealed leucocytosis, increased CRP and CPK, and a slightly elevated D-dimer. On the second day of admission, the patient complained of acute abdominal pain in the right lower quadrant. An abdominal computed tomography scan showed thrombosis of the right renal artery with an ischaemic lesion of the renal parenchyma. Renal angiography confirmed the diagnosis of renal artery thrombosis.

Discussion: The angioplasty failed to restore revascularization of the right renal artery, and the treatment was antiplatelets, and full anticoagulation was considered. The patient was discharged after ten days with stable vitals and preserved renal function.

Conclusion: The differential diagnosis of renal artery thrombosis secondary to COVID-19 must be considered in patients with unexplained abdominal pain, who may or may not be critically ill with the coronavirus disease.

Keywords: COVID-19, Infectious disease, Thrombosis, Renal artery

Diabetes Insipidus In A Two-Month-Old Infant - Case Report

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CASE REPORT TEXT

Introduction: Central diabetes insipidus is most often the result of a number of conditions affecting the hypothalamic-neurohypophyseal system with a prevalence of 1 in 25,000 individuals. The disorder can manifest itself at any age, and the prevalence is similar among men and women. The work aims to present the diagnostic procedure toward the final diagnosis through a case report.

Case description: A two-month-old female infant was hospitalized for an examination of intermittently elevated body temperature and findings suggestive of diabetes insipidus. Upon admission, laboratory work was performed, where the findings showed a slightly elevated serum osmolality, urine hyperosmolality, and mild hypernatremia with normal acid-base status. Blood tests showed normocytic, and normochromic anemia. An ophthalmologist was consulted because of convergent strabismus and rolling movements of the bulb, where it was noted that the pupils were weakly reactive to light. A radiological diagnosis was carried out, where the magnetic resonance imaging of the endocranium indicated the existence of bilateral hypoplasia of the optic nerve with morphological changes of the infundibulum and the posterior segment of the pituitary gland, which indicates hypothalamic-pituitary dysfunction and confirms the clinical diagnosis of central diabetes insipidus.

Discussion: Hyperosmolality of serum, hypernatremia, and hyperchloremia, the existence of hyperosmolality of urine clearly indicate the diagnosis of diabetes insipidus. However, until the final diagnosis, we do MR identification of pituitary hyperintensity in the posterior part, which is a clear marker of the functional integrity of the neurohypophysis.

Conclusion: Many pediatricians encounter children with diabetes insipidus and establishing a diagnosis is not always easy. The tests we use in this group of patients are not without risk, and the suboptimal sensitivity and specificity of each test should be kept in mind.

Keywords: diabetes insipidus, pituitary gland, neurohypophysis

Sociodemographic Characteristics of Pediatric Patients with Diagnosis of Acute Leukemia

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ABSTRACT TEXT

Background: Leukemia is the most prevalent pediatric malignancy, representing up to 30% of all pediatric cancers. Attributable to the improvement of treatment protocols, numerous studies have confirmed declining childhood leukemia mortality rates over the last several years. Despite decades of research, few definitive risk factors have been identified. The correlation between sociodemographic determinants and the occurrence of pediatric acute leukemia is yet to be investigated in detail.

Aim: To present sociodemographic characteristics of pediatric patients diagnosed with acute leukemia in Bosnia and Herzegovina during a five-year period.

Methods: This study was conducted at the Department of Hemato-Oncology, Pediatric Clinic, University Clinical Center Sarajevo from July 2017 to July 2022. We assessed the medical records of 44 pediatric patients diagnosed with acute leukemia in the aforementioned period.

Results: Out of 44 pediatric patients diagnosed with acute leukemia, 29 (65.91%) were males. Acute lymphoblastic leukemia was identified in 40 (90.91%) cases. During the prior mentioned interval, we registered 5 lethal outcomes (11.36%), of which 80% were male patients. The most common age groups among newly diagnosed patients were preschool and school-age children, representing altogether 72.73% of diagnosed cases. A single case of infant leukemia was detected in the aforesaid period. The majority of patients were born during the autumn months (40.91%). Demographically, a considerable number of patients originated from the Sarajevo Canton and the Una-Sana Canton (36.36% and 22.73% respectively).

Conclusion: Analytics of newly diagnosed cases of childhood acute leukemia in Bosnia and Herzegovina during the five-year period reveals male predominance, as well as the peak of occurrence at preschool and school-age. ALL persists as the most common subtype of leukemia in our study, as well as in other similar studies worldwide. Demographic analysis reveals that Sarajevo Canton has the highest percentage of newly diagnosed cases.

Keywords: pediatric cancers; acute leukemia; sociodemographics

Comparative Analysis Of Different Methodological Procedures For Measuring The Concentration Of Electrolytes In Extracellular Fluid In Patients With Respiratory Insufficiency

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ABSTRACT TEXT

Background: Respiratory insufficiency (RI) means the inability of the body to maintain gas exchange between the atmosphere and organs. The consequences of RI can be reflected in changes in acid-base balance and changes in the level of serum electrolytes. Reliable results of laboratory tests are of great importance, but they are also susceptible to various manual and system errors.

Aim: To determine the characteristics of the patients and the possible existence of statistically significant differences in the concentration of electrolytes in relation to the measurement methodology in patients with RI.

Methods: The study involved 51 patients, aged 29 – 84, who were diagnosed with RI based on the value of gas analyses in arterial blood and clinical laboratory tests, who had both samples of electrolyte values analyzed on the same day. Measurements included blood gas analyses and determination of serum electrolyte panel.

Results: In patients with laboratory signs of RI (28 males and 23 females), according to pH values (7.280 ± 0.128 vs 7.302 ± 0.163), there wasn't a statistically significant difference in electrolyte concentration values (Na^+ : 145.939 ± 8.116 vs 141.683 ± 7.150 mmol/l, $p > 0.05$), (K^+ : 4.823 ± 1.187 vs 4.425 ± 1.118 mmol/l, $p > 0.05$), (Cl^- : 114.839 ± 7.627 vs 112.43 ± 7.513 mmol/l, $p > 0.05$) with two different methodological procedures.

Conclusion: There was no statistically significant difference in the values of serum concentrations of Na^+ , K^+ and Cl^- , in relation to different methodological measurement procedures in patients with RI in intensive care units, which may be important in terms of reliability of laboratory results in acute exacerbations of respiratory insufficiency.

Keywords: sodium; potassium; chloride; blood gas analyses; respiratory insufficiency

Hyperammonemic Crisis In An Infant- Symptoms, Treatment, And The Importance Of Early Recognition

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CASE REPORT TEXT

Introduction: A hyperammonemic crisis refers to symptoms that arise from toxic concentrations of ammonia in the bloodstream. This can be a result of deficient metabolic processes that impair the ability to excrete excess nitrogen, such as urea cycle disorders, or as a result of other, more common conditions such as liver cirrhosis or toxin exposure. Since episodes can be triggered in early childhood, recognition of the early signs and symptoms in this age group is crucial.

Case description: Our patient, a 1-year-old boy, was admitted to a general hospital due to a urinary tract infection. On admission, he was pale, lethargic, hypotrophic, and hypotonic. Initial metabolic workup revealed moderate hyperammonemia (ammonia around 300 $\mu\text{mol/L}$) and further metabolic workup led to a diagnosis of urea cycle disorder- citrullinemia type 1, a rare autosomal recessive genetic disease. The treatment with ammonia scavengers was started, but due to too high protein intake and further catabolism, clinical deterioration continued, dominantly with signs of liver failure. The patient was then relocated to a specialized center. He arrived in a severely compromised clinical state with impaired consciousness, impending respiratory insufficiency, and severe coagulopathy. He was placed in the ICU and mechanically ventilated for a period of 10 days. Despite the therapy with ammonia scavengers (sodium benzoate and sodium phenylbutyrate), ammonia levels continued to rise. Hemodiafiltration was then utilized until ammonia levels were normalized. He then underwent significant clinical improvement with the continuation of chronic peroral treatment (ammonia scavengers, low protein intake, and high energy intake).

Discussion: Hyperammonemia is an emergency condition, and timely recognition and proper treatment are vital to the outcome of these high-risk patients.

Conclusion: A hyperammonemic crisis can lead to severe neurological damage or a fatal outcome if not taken into account.

Keywords: hyperammonemia, citrullinemia type 1, urea cycle disorder

**ORAL
SESSION
II**

SURGERY

Multi-level Anterior Cervical Discectomy and Fusion (ACDF): Case series and Review of the Literature

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ABSTRACT TEXT

Background: An anterior approach to the cervical spine has shown positive results for the treatment of degenerative pathologies at single or two levels. However, anterior cervical discectomy and fusion (ACDF) have become highly successful surgery in multi-level cervical disc disease as well. Nowadays, even when the fusion rate in a single or two-level is excellent, a certain amount of patients will suffer from further degeneration at the adjacent level. Furthermore, multi-level ACDF was found beneficial regarding kyphosis correction.

Aim: The results of our case series with the review of the literature regarding safeness and long-term advantages.

Methods: A systematic literature review with a retrospective study of the patients treated in the Department of Neurosurgery of the CCUS performed in a one-year period (2021-2022).

Results: A total of ten patients with three and four-level degenerative disc disease were treated in a one-year period. For all patients, intra-operative and post-operative X-rays confirmed the excellent position of the implants. There were no procedure-related complications or infections. Patients were discharged from the department 48 hours after the procedure. All patients experienced improvement of the preoperative symptoms by Visual Analog Scale (VAS) and improvement of the neurological deficit regarding motor strength test (1/5).

Conclusion: ACDF is recognized as a safe and satisfactory microsurgical treatment of the multi-level degenerative disc disease in selected cases with no complications in our series. From our experience drilling of the anterior wall of the vertebral bodies leads to decreased levels of postoperative dysphagia. Furthermore, a varying degree of kyphosis correction was found in the literature review. Reviewed data revealed dysphagia and pseudoarthrosis remain the most common complications, although our limited cases haven't confirmed procedure-related complications".

Keywords: spinal fusion, spinal cord diseases, discectomy, cervical vertebrae, kyphosis

Post-reconstructive Complications and Magnetic Resonance Imaging of Anterior Cruciate Ligament

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ABSTRACT TEXT

Background: The anterior cruciate ligament (ACL), the most commonly injured knee ligament, functions to stabilize the knee joint by preventing hyperextension, abnormal rotation of the knee, and by limiting the anterior displacement of the tibia under the femur. Being the weaker of the two cruciate ligaments, the ACL is prone to rupture during repositioning of the knee joint that deviates from the standard physiological movements. Post-reconstructive complications of ACL repair include the occurrence of graft rupture, arthrofibrosis, venous thromboembolism (VTE), and infection. Magnetic resonance imaging (MRI) offers high-accuracy imaging of ACL injuries, thus is utilized for diagnostic purposes.

Aim: The aim of this review was to present a comprehensive overview of the pathology of ACL injuries, frequently encountered adverse outcomes following surgical intervention, as well as magnetic resonance imaging of post-reconstructive complications.

Methods: Cases dating back to 2002, extracted from the PubMed database, as well as the Radiological Society of North America (RSNA) and American Journal of Roentgenology (AJR) websites, were reviewed to identify recurring post-reconstructive ACL complications and their usual pathological presentations on the MRI.

Results: Out of the cases reviewed, graft rupture had the highest rate of incidence (6,07%), followed by arthrofibrosis (5,05%), and VTE (3,91%), whereas infection was assessed at 0,77%. MRI identified graft rupture and knee misalignment with the highest accuracy, whereas identification of VTE and kinetic impairment was infrequent, as they are standardly detectable via duplex ultrasonography/CT pulmonary angiography and physical examination, respectively.

Conclusion: Patients experiencing major ACL tears undergo surgical intervention which may induce post-reconstructive complications. Clinician's awareness of the referred negative outcomes and their presentations on the MRI is essential to avoid delay in the proper treatment. Development of low-rated adverse complications is to be noted in the post-reconstructive ACL repair period despite the high success rate of the surgery.

Keywords: Anterior cruciate ligament reconstruction; ACL tears; postoperative complications; MRI scans

Use of Probiotics in Outpatient Treatment of Selected Symptoms and Conditions at the Clinic for Abdominal Surgery Clinical Centre University of Sarajevo

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ABSTRACT TEXT

Background: Probiotics represent nutritional supplements starting to get included in novel therapeutic modalities for treating symptoms and preventing surgical site infections. Different mechanisms of action attributed to probiotics represent a basis on which this adjunct therapy can contribute to the treatment of different surgical and surgery-related categories.

Aim: To define the impact of probiotics on selected presenting symptoms and conditions in an outpatient setting at the Clinic for Abdominal Surgery at the Clinical Centre University of Sarajevo for one year.

Methods: This research was conducted as a clinical retrospective observational case-control study. According to the criteria, it included 520 patients in an outpatient treatment divided into seven groups according to the treated symptom or condition. Each group was divided into two subgroups, based on whether they were prescribed probiotics. The analyzed data were based on the symptoms reported at the time of two medical examinations, after seven days and after a month, respectively.

Results: Of the observed categories, the symptoms were significantly elevated in a group of patients with non-specific abdominal pain who used probiotics as a part of their treatment on their first medical examination. Probiotics had a significant effect in preventing antibiotic-associated diarrhea in patients who were prescribed a course of antibiotics after surgery. Patients with bloating, irritable bowel syndrome, gastroenterocolitis, and constipation have not had a significant improvement of their symptoms, as well as patients who have recently undergone a surgical procedure.

Conclusion: The data about the usage of probiotics and other nutritional adjuncts in the treatment of different symptoms occurring in abdominal surgery varies and additional research is needed to define the role of probiotics along with prebiotics and synbiotics to define the exact categories that can be successfully treated with these supplements in addition to standard care

Keywords: probiotics, outpatient, symptoms, treatment, surgery

Decompressive Laminectomy – A Procedure Of Choice For Treating Spontaneous Spinal Epidural Hematoma: A Case Report

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CASE REPORT TEXT

Introduction: Spinal epidural hematoma is defined as an accumulation of blood in the epidural space that can mechanically compress the spinal cord. If it is not recognized on time it may lead to rapid and irreversible neurological impairment. The incidence of spontaneous spinal epidural hematoma (SSEH) is considered to be 0.1 per 100,000 per year. The exact etiology of SSEH remains unknown in 40–50% of the patients, although vascular malformations, coagulopathy, anticoagulants, and the conditions causing increased intrathoracic and intra-abdominal pressure have been reported as the predisposing factors for SSEH.

Case description: A previously healthy 17-year-old female patient presented to the Department of Pediatrics due to bilateral weakness in the lower extremities. The night before admission she felt pain between her shoulder blades. During a neurological examination, she was found to be paralyzed in both legs with sensory loss below the Th8 level, hyperreflexia and sphincter dysfunction. The MRI confirmed the presence of epidural hematoma extending from C7 to Th3. Decompressive laminectomy with hematoma evacuation was performed. After physical therapy, complete recovery had been achieved.

Discussion: SSEH is a potentially disabling neurosurgical emergency, representing 0.3%-0.9% of lesions that occupy the vertebral epidural space. The etiology of SSEH is still under debate. MRI provides the most valuable information regarding the localization and the size of the hematoma as well as the presence of spinal cord compression. Spinal cord ischemia tends to be reversible if the laminectomy is performed within 8 hours after the onset of neurological dysfunctions. In our case, even though the surgery was performed more than 48 hours after the onset of symptoms, complete recovery had been achieved.

Conclusion: SSEH is a rare but serious condition that can lead to disabling or even fatal consequences. Immediate MRI is crucial for early diagnosis. Decompressive laminectomy with hematoma evacuation is the most efficient therapeutic procedure when dealing with severe SSEH

Keywords: Decompressive laminectomy, Spontaneous spinal epidural hematoma, Spinal cord injury

Immediate and delayed breast reconstruction in the same patient

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CASE REPORT TEXT

Introduction: Breast reconstruction has enabled women to overcome a tragic chapter in their lives. Breasts are essential to a woman's femininity, so they uphold the authority and make their own reconstruction decisions, including approval of the outcome. There are numerous surgical procedures utilizing breast implants, autologous tissue, or combined approaches to resolve contour alterations, volume loss, and breast deformity. The main goal is to assure the survival of the patient and a good esthetic outcome that will influence the quality of life in women after mastectomy.

Case description: We present a 45-year-old patient that underwent radical mastectomy and lymphadenectomy of the right side due to stage 2A ductal carcinoma in the year 2020. Approximately ten months after her last course of neoadjuvant therapy, she asked for the reconstruction of the right breast. Due to soft tissue depression, lipofilling was done at the first stage following a secondary implant-based reconstruction and prophylactic skin-sparing mastectomy with primary implant-based reconstruction on her left side. The final procedure followed a year later comprised bilateral nipple-areolar complex reconstruction and touch-up lipofilling to accomplish equal volume to both breasts.

Discussion: As more young females are affected by breast cancer the importance of breast reconstruction has been ever-evolving in the last decade. For optimal results, it is necessary for the patient to go through a multistage operation of lipofilling and prosthesis-based procedures.

Conclusion: Breast reconstruction continues to be at the forefront of the area of breast carcinoma treatment achieving good esthetic results as part of holistic carcinoma treatment. And what is the most important, breast reconstruction does not affect overall treatment and life expectancy meaning it is a safe procedure.

Keywords: breast cancer, breast reconstruction; mastectomy; implants;

An atypical presentation of a patient with a combination of omphalomesenteric duct related anomalies: A case report

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CASE REPORT TEXT

Introduction: The omphalomesenteric (vitelline) duct is an embryonic structure that connects the yolk sac to the midgut. Failure of the omphalomesenteric duct involution results in various omphalomesenteric duct remnants including Meckel's diverticulum, patent vitelline duct, fibrous band, sinus tract, umbilical polyp, and cyst.

Case description: A 12-year-old boy presented with abdominal pain, nausea, and vomiting. He had no bowel movements for the previous 3 days and there was no history of fever. During the physical examination, the abdomen was soft, and painful to palpation, especially in the ileocaecal region. An abdominal ultrasound was suggestive of acute appendicitis. Laboratory findings were notable for leukocytosis with a neutrophilic predominance. After evaluation by a pediatric surgeon, the patient was indicated for emergency surgery due to suspicion of acute appendicitis. The laparotomy evidenced Meckel's diverticulum that originated from the antimesenteric side of the ileum and was connected by a sinus in cystic dilatation which was fixed for the inner side of the umbilicus. The patient underwent partial ileal resection with ileo-ileal anastomosis termino-terminal and appendectomy. Pathohistological examination of a surgical specimen showed a histological picture of the ectopic gastric mucosa.

Discussion: Clinical presentation of omphalomesenteric remnants includes abdominal pain, intestinal obstruction, rectal bleeding, umbilical hernia, and umbilical discharge. Preoperative diagnosis of possible Meckel's diverticulum is often difficult, as its clinical manifestation is usually nonspecific and may mimic other acute intraabdominal entities such as appendicitis, inflammatory bowel disease, or other causes of bowel obstruction. In the present case, the entire omphalomesenteric duct has remained, but forming a patent fistula, it presented with a sinus tract communicating with an omphalomesenteric cyst, which was connected by a sinus to a Meckel's diverticulum.

Conclusion: Delay in the diagnosis of a symptomatic Meckel's diverticulum can lead to significant morbidity and mortality. Early surgery is important to prevent strangulation and gangrene of the bowel.

Keywords: Vitelline duct, Meckel's diverticulum, Omphalomesenteric cyst.

A Rare Indication for Surgical Resection of Focal Nodular Hyperplasia: Hepatoduodenal Ligament Compression

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CASE REPORT TEXT

Introduction: Focal nodular hyperplasia (FNH) is the second most common benign hepatic tumor. Although the etiology and pathogenesis remain unclear, it is mostly found incidentally in women between the ages of 25-50. It is usually treated conservatively and more radical interventions are not required in most cases. In this case report, compression of hepatoduodenal ligament required surgery.

Case description: In 2012, a 47-year-old female patient presented with dull, mild, continuous pain that was caused by a benign liver tumor. Contrast-enhanced MRI revealed a tumor that was 8 cm in diameter in the V and VI segments, consistent with focal nodular hyperplasia. The patient has been followed for the past ten years and the medical history shows pain attacks that affected her daily life and hospitalization due to cholangitis attacks. The last MRI study revealed a progression of the nodule to segment IVb with compression on the hepatoduodenal ligament, and displacement of the right kidney and the gallbladder. Considering indications, surgical removal was performed.

Discussion: In the majority of cases, FNH is an asymptomatic benign liver tumor. Extremely rare, abdominal pain, nausea, or vomiting can occur. The severity of these symptoms required surgical intervention in only two cases reported to present. Moreover, if FNH presents unusually, as in our case, surgery is necessary to relieve symptoms and exclude the differential diagnosis of fibrolamellar hepatocellular carcinoma.

Conclusion: We present a clinical case of rare, symptomatic FNH that compressed hepatoduodenal ligament, caused biliary stasis, a disorder in liver blood supply followed by disabling symptoms, and was associated with cholangitis. To our knowledge, there have been only two other, similar reported cases.

Keywords: focal nodular hyperplasia, compressed hepatoduodenal ligament, benign liver tumor

**ORAL
SESSION
III**

**BIOLOGY,
PATHOPHYSIOLOGY,
PSYCHIATRY
AND
PUBLIC HEALTH**

Determining the relationship between psychosomatic difficulties and the experience of abuse on a Bosnian and Herzegovinian sample

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ABSTRACT TEXT

Background: Violence, as defined by the WHO, is the intentional use of physical force or power, whether threatened or actual, against oneself, another person, a group, or a community, which results in or has a high probability of resulting in damage, death, psychological harm, maldevelopment, or deprivation. Numerous studies have discovered a strong link between higher levels of psychological stress and earlier emotional and physical maltreatment. The activation of inflammatory, oxidative, and nitrosative stress pathways, which are proinflammatory in nature and result in chronic inflammation and tissue damage, is highly correlated with psychological stress.

Aim: This study was done to collect more information on the relationship between abuse and psychosomatic symptoms in Bosnia and Herzegovina, considering the lack of research on the topic in this country.

Methods: 216 subjects of all age groups participated in the research. Data were gathered using the NorVold Abuse Questionnaire (NorAQ) and the Patient Health Questionnaire-15 (PHQ-15). They were adapted and distributed in an online form. One-way analysis of variance (ANOVA) was employed in this study.

Results: There was a statistically significant difference in the severity of somatic symptoms between individuals who experienced severe forms of emotional ($p=.00$) or physical abuse ($p=.004$), and health system abuse ($p=.011$), and those who had never experienced these forms of abuse. However, no differences in the severity of somatic symptoms were observed between those who experienced mild ($p=.003$) or moderate ($p=.00$) abuse of these forms, and those who did not experience abuse. Furthermore, statistically significant differences in the severity of somatic symptoms between those who experienced sexual abuse and those who did not were not detected in this study.

Conclusion: Abuse can result in somatization symptoms, these findings imply the need for a better support system for those who have endured violence to stop the onset of life-threatening illnesses.

Keywords: somatisation, psychological stress, violence, chronic disorders, abuse

Attitudes Towards Smoking and Smoking Status of Medical Students from the Western Balkans

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ABSTRACT TEXT

Background: Smoking among students is a significant public health problem. Bad habits acquired in youth influence the development of non-communicable diseases later in life.

Aim: This study aimed to examine the association between students' smoking status and attitudes towards smoking with nutritional status, household income, type of settlement, and parents' smoking status.

Methods: The cross-sectional study included 2452 students from 14 faculties of medical sciences in five countries of the Western Balkans (the Republic of Slovenia, Republic of Croatia, Bosnia, and Herzegovina, Republic of North Macedonia, and Republic of Serbia). An online survey questionnaire was used as a research instrument.

Results: The sample included 2015 (82.2%) female and 437 (17.8%) male students, from preclinical (1638; 66.8%) and clinical (814; 33.2%) years of study. The smokers were more often overweight and obese students who lived in urban areas prior to their studies and whose parents were both smokers. Mother and father were more often smokers for obese students who came from rural settlements in relation to underweight students coming from urban settlements whose neither parent was a smoker. Both parents were usually non-smokers in households that has above-average incomes. Mothers were frequently more often smokers in households in which income was below average. In relation to the examined independent variables, students did not differ significantly in their attitudes towards smoking. More than 80% of students believed that occasional smoking can have adverse effects on health. Also, 80% of smokers thought that they did not need professional help to stop smoking. About half of the students stated that they would reduce smoking if a ban on smoking was introduced in public places, while the other half believed that they would not stop smoking.

Conclusion: It is necessary for public health officials to continuously educate the student population on the adverse effects of smoking on health and the influence of smoking cessation which would contribute to improving the health of the student population.

Keywords: smoking; medical students; young adults; public health; Western Balkans

Red Cell Distribution Width and platelet indices as inflammatory parameters in type 2 diabetic patients with kidney dysfunction

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ABSTRACT TEXT

Background: Diabetes mellitus is a chronic disease marked by persistent hyperglycemia. Uncontrolled hyperglycemia is accompanied by inflammatory processes and atherosclerotic changes leading to macrovascular and microvascular complications, including kidney dysfunction. Red cell distribution width (RDW) and platelet indices, which are routinely used biomarkers for metabolic and cardiovascular disorders, have been proposed to indicate endothelial dysfunction in relation to microvascular complications of diabetes mellitus type

Aim: To assess RDW and platelet indices values in patients with type 2 diabetes mellitus (T2DM) and to verify its association with renal dysfunction (RD).

Methods: A cross-sectional study included 149 T2DM patients divided into two groups with (T2DM – RD; n=52) and without (T2DM-nRD; n=97) presence of renal dysfunction and 30 healthy subjects. WBC count, C-reactive protein, fibrinogen, RDW, platelet indices, urea, and creatinine, were measured in all participants. Renal function was evaluated by the estimated glomerular filtration rate (eGFR) calculated using the simplified Modification of Diet in Renal Disease (MDRD) formula.

Results: T2DM-RD patients showed statistically significantly higher values of the parameters RDW ($p<0.01$), MPV ($p<0.01$), PDW ($p<0.01$), PCT ($p<0.01$), and PMI ($p<0.01$) compared to T2DM-nRD patients, and statistically significantly lower values of the WBC parameter in T2DM-RD patients compared to patients suffering from DM2 without renal dysfunction ($p<0.01$). ROC curve analysis revealed that RDW (cut-off level of 53.5, with a sensitivity of 80.8%, specificity of 78.3%), MPV (cut-off level of 11.55, with a sensitivity of 75%, specificity of 78.4 %), and PDW (cut-off level of 15.65, with a sensitivity of 80.8%, specificity of 83.5%) could be used as markers in distinguishing between T2DM patients with and without renal dysfunction.

Conclusion: This study confirms the reliability of the RDW, MPI, and PDW as simple, low cost and useful markers in distinguishing between T2DM patients with and without renal dysfunction.

Keywords: eGFR, RDW, platelet indices, diabetes mellitus type 2, renal dysfunction

The importance of cytogenetic analysis in patients with azoospermia

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ABSTRACT TEXT

Background: Azoospermia (the absence of sperm in the semen) significantly amounts to infertility in men (15% of infertile men). Since genetics play a huge part in its origin, genetic testing needs to be considered as an important part of early diagnostics when evaluating azoospermic patients.

Aim: Our study aimed to determine the genetic cause of azoospermia, to analyze karyograms and the possible presence of Y chromosome microdeletion.

Methods: The study included 20 men diagnosed with azoospermia. The oldest male was 50 and the youngest was 24 years old. They were sent for analysis of karyotype and microdeletions of the Y chromosome (AZF region) to the Center for Genetics of the Faculty of Medicine.

Results: The results of the cytogenetic analysis showed 3/20(15%) of abnormal karyotypes. Three patients were identified with two different translocations that were not previously reported. Two brothers were identified with the same translocation between the short arm of chromosome 8 and the long arm of chromosome 17 [46, XY, t(8;17)(p23;q11)] after both of them had failed IVF. The third patient with a chromosomal translocation between the short arm of chromosome 4 and the long arm of chromosome 11 [46, XY, t(4;11)(p16;q13)]. Molecular genetic analysis showed no Y chromosome microdeletion in any of these three cases. However, from the rest of the group, only one patient had Y chromosome microdeletion in the AZFc region (one of the most common causes of genetic azoospermia). His karyotype was normal.

Conclusion: Our study confirms that cytogenetic and molecular genetic analysis plays a crucial role in identifying the cause of azoospermia. Genetic counseling should be provided when these abnormalities are identified before making any future medical decisions.

Keywords: Azoospermia, karyotype, microdeletion chromosome Y

Pathohistological Characteristics Of Liver Tumors In Samples Obtained With Fine Needle Biopsy

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ABSTRACT TEXT

Background: By origin, liver tumors can be primary or secondary. Primary tumors originate from liver cells and are less common than secondary ones. Secondary tumors are metastases from distant organs elsewhere in the body, most common colorectal carcinoma, breast carcinoma, neuroendocrine tumors, lung carcinoma, and gastric carcinoma.

Aim: To determine pathohistological features of liver tumors in fine needle biopsy samples as well as immunohistochemical antibodies important for the diagnosis of these tumors.

Methods: The study was retrospective and included pathohistological analysis of 102 samples of liver tissue obtained by fine needle biopsy in 2020 and 2021, at the Institute of Oncology of Vojvodina which included additional immunohistochemical analysis. Data were processed with *SPSS 20.0 software*.

Results: There were slightly more females in the selected sample of examinees. The average age was 64 years. The diagnosis of the primary liver tumor was made in 37.2% of cases, and intrahepatic cholangiocellular carcinoma was present more often (65,8%) than hepatocellular liver carcinoma (34,2%). In 55.9% of cases, metastases originated from the pancreas and gastrointestinal tract while other sites of primary tumor origin included 40,4%. Important markers for hepatocellular carcinoma are *HepPar1*, *Glypican-3*, and *CD34*, while cholangiocellular carcinoma was mostly positive for *CK7*, *Ca19.9*, *CK19*, and *CK17*. Metastatic adenocarcinomas show positivity for *CK7*, *CK19*, and *CK20* as well as *pCEA*. Important markers in the detection of neuroendocrine tumor liver metastases are *Chromogranin* and *Synaptophysin*. The percentage of tumors of unknown primary origin was 6,9%.

Conclusion: The origin of tumor cells is more precisely determined by the immunohistochemical method using specific antibodies that react with specific antigens in tumor cells. The problem in making the diagnosis occurs in the case of a lack of diagnostic material or extremely poor differentiation of tumor cells.

Keywords: liver tumor; metastases; fine needle biopsy; immunohistochemistry

Alkaline Phosphatase And Lactate Dehydrogenase As Biochemical Parameters With Prognostic Significance In Patients With Metastatic Colorectal Carcinoma Without Kras Mutation

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ABSTRACT TEXT

Background: Colorectal cancer is the third most common malignancy and the second most common cause of death in oncology. The monoclonal antibodies cetuximab and panitumumab are significant therapeutic options in patients with metastatic cancer without a KRAS mutation. Prognostic and predictive factors are of great importance in the choice of therapy, prognosis, and disease monitoring in oncology. Alkaline phosphatase (ALP) and lactate dehydrogenase (LDH) have shown potential as these factors when it comes to metastatic colorectal cancer.

Aim: Our study aimed to analyze the clinical-pathological characteristics of patients with metastatic cancer without KRAS mutation, and to determine whether there is a significant difference in overall survival (OS) and progression-free survival (PFS) depending on ALP and LDH values.

Methods: 120 patients treated at the Oncology Institute of Vojvodina in Sremska Kamenica between 2009 and 2014 were retrospectively analyzed. Demographic and laboratory-clinical data (sex, age, ALP and LDH levels, localization of the primary tumor, number and localization of metastatic sites, prescribed therapy, PFS, and OS) were obtained from the hospital information system and statistically processed.

Results: Out of 120 patients included in the research, 71% of patients were male and 29% were female. The mean age of the participants in the research was 59.85 ± 8.52 years. Patients with ALP and LDH values in the reference range showed statistically significant difference ($P=0,012$ and $P=0,015$, respectively) in overall survival (median: 40 months, for both parameters) compared to patients with elevated levels of ALP and LDH (median: 35 months, for both parameters). Patients with elevated ALP and LDH levels had worse PFS, but without a statistically significant difference (median: 7 vs. 4 months and 7 vs. 5 months, respectively; $P>0.05$).

Conclusion: ALP and LDH have the potential to be significant prognostic factors when it comes to colorectal cancer without KRAS mutation.

Keywords: Colorectal cancer; alkaline phosphatase; lactate dehydrogenase; overall survival.

Assessment of morbidities related to computer work in engineers of information technologies

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ABSTRACT TEXT

Background: Due to the increasing number of professions in which people use computers, the associated morbidities and injuries that could arise from them are a growing problem in the developed world. It is therefore justified to discuss the prevention, safety, and risk factors that could be a possible cause of damage to computer workers' physical and mental health.

Aim: This paper aims to estimate the prevalence of morbidities that occur in computer engineers and that could be associated with their working place and make recommendations on how health problems caused by prolonged computer work can be prevented.

Methods: The study included 22 male subjects, with an average age of 32.2 (± 5.0) years. All subjects are employed as computer science engineers. For this research, we used the following data: insight into previous medical documentation; working, personal, and family history; history of current illnesses (if presented); clinical examination by systems; laboratory findings (blood count, cholesterol, triglycerides, FT3, FT4, TSH); electrocardiogram (ECG); echocardiography; Doppler imaging of vertebral arteries; abdominal ultrasound and examination by a physiatrist.

Results: An anamnestic examination by a physiatrist revealed the following most common symptoms in the subjects, which relate to the morbidity of the locomotor system: pain in the lower back; neck pain; spreading pain from the neck along the right or left arm; pain in the hand; vertigo after a rapid movement of the head to the side. Physical examination revealed changes in the musculoskeletal system in 77% of the total number of subjects. In 72% of the subjects, we found reduced systolic flow through the vertebral arteries. Abdominal ultrasound showed signs of initial steatosis of the liver in (18%) and 31.8% of the subjects were in the overweight category.

Conclusion: Working on a computer seems to be a risk factor for increased morbidity of the locomotor system and obesity as well since these two diseases were most commonly found in our study group. It is necessary to implement preventive measures related to changes in individual behavior, and acceptance of healthy lifestyles that include regular physical activity and a balanced diet, but also measures related to working place (desk, computer with equipment, and work chair).

Keywords: IT engineers, locomotor disease, obesity, risk factor prevention

POSTER SESSION

1a

Say AAA - *Lingua Geographica* As An Unusual Presentation Of Cytomegalovirus Infection

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CASE REPORT TEXT

Introduction: In most patients, cytomegalovirus (CMV) infection is asymptomatic, and when symptoms are present, they usually consist of fever, fatigue, sore throat, and swollen glands. This case report brings attention to its rare and unusual manifestations. *Lingua geographica* is a benign condition with distinctive red and smooth irregular depapillation lesions surrounded by a white border. Its cause is unknown but occurs in some diseases, such as *H. pylori* infection, psoriasis, and asthma.

Case description: A 74-year-old female patient presented to the emergency department with palpitations, fatigue, and malaise. On examination, she was subfebrile (37,2°C), normotensive, and eupneic, with 77 heartbeats per minute and rhythmic actions on auscultation. On palpitations, a sensitive abdomen was found, with a slightly enlarged liver. While examining the oral cavity, we've noticed unilateral changes consistent with the geographic tongue. When asked about it, the patient stated that she noticed the changes approximately 6 weeks prior, and she denied having any accompanying symptoms. Laboratory analysis showed elevated AST (130 U/L) and ALT (91 U/L) consistent with acute liver damage, as well as leukocytosis ($11,3 \times 10^9$) and relative lymphocytosis (50%). Leukogram showed reactive lymphocytosis (8%). Infective mononucleosis was suspected and serology for EBV and CMV, together with HAV, HBV, and HCV was indicated.

Discussion: Serology confirmed the diagnosis of acute CMV infection with positive IgM for CMV. Other diseases and conditions associated with geographic tongue were excluded and the link between the time of the appearance of changes and the incubation period of CMV was observed, raising the assumption that *lingua geographica* was the first sign of the infection.

Conclusion: When making a diagnosis, in addition to usual signs and symptoms, it is important to think about the unusual ones. Given that pathological findings of the oral cavity can be indicators of numerous systemic diseases and infections, each patient needs to be examined thoroughly.

Keywords: cytomegalovirus infection, geographic tongue, liver enzymes

Homeopathy Gone Wrong? Arsenic Intoxication Resembling Acute Coronary Syndrome

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CASE REPORT TEXT

Introduction: Arsenic toxicity can be acute or chronic – acute toxicity presenting with nausea, vomiting, abdominal pain, and severe diarrhea, while chronic toxicity results in a multisystem disease, wherein there is a possibility of cardiotoxicity. While it is most commonly ingested accidentally, this case presents deliberate arsenic ingestion as a homeopathic preparation.

Case description: A 51-year-old male patient was brought into the emergency department due to palpitations, dyspnea, and hypotension. After his usual physical activity, the patient experienced the aforementioned symptoms for 15 minutes, as well as a symptom of chest pressure and tingling sensations in the left arm. After initial improvement, symptoms recurred 30 minutes later when he called the ambulance. He recalled experiencing similar symptoms over the last three months but of lesser intensity. The patient was previously healthy, apart from chronic sinusitis diagnosed 3 years prior for which he regularly takes homeopathic arsenic preparation. Initial electrocardiogram recorded ventricular tachycardia of 205/min. His vitals stabilized after administration of acetylsalicylic acid (300 mg), amiodarone (150 mg), and saline (500 mL). Later electrocardiograms recorded ST denivelations in leads I, II, aVF and V₁-V₆, regressing after two hours. Acute coronary syndrome was suspected and coronarography was indicated.

Discussion: Coronarography verified normal coronary blood flow without visible atherosclerotic stenosis. Consistent with findings of elevated liver enzymes (AST and ALT) and creatinine, chronic arsenic intoxication was suspected. Following specific blood analysis for heavy metals, high levels of arsenic were shown, confirming the diagnosis.

Conclusion: This case could serve as an example of importance of comprehensive anamnesis/history; while every sign and symptoms pointed towards acute coronary syndrome, careful history taking enabled us to diagnose chronic arsenic intoxication, which may present as direct myocardial injury or cardiac arrhythmias. In conclusion, clinicians should always consider any supplements or over-the-counter medication, as well as traditional medicine concepts during diagnostic history taking.

Keywords: acute coronary syndrome, arsenic poisoning diagnosis, homeopathy

Nontypical Patterns of Cytomegalovirus Lymphadenopathy: a Case Report

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CASE REPORT TEXT

Introduction: Cytomegalovirus (CMV) is a common virus that typically causes mild or no symptoms in healthy individuals. When symptoms are present, they usually include nonspecific issues such as fever, fatigue, headaches, muscle aches, sore throat, an enlarged spleen, and lymphadenopathy. The lymph nodes of the head and neck are most commonly involved, but that is not always the case, as shown in this case report.

Case description: The patient is a 41-year-old woman who first noticed enlarged lymph nodes surrounding her cesarean section, two months prior to admission. After around six weeks, she began noticing enlarged inguinal lymph nodes, then a week later, enlarged retroarticular lymph nodes. She reports feeling weakness and fatigue during the last 6 months. She experienced no B symptoms. Upon admission, a clinical examination showed multiple palpable submandibular lymph nodes and nodes along her sternocleidomastoid muscle, up to 1cm in size. No palpable lymph nodes were found in the inguinal area and surrounding her cesarean section. Her symptoms lead doctors to suspect a hematologic disease since multiple areas of lymph nodes were being affected. Her laboratory findings most notably showed lymphopenia, which could be caused by a viral pathogen. CMV was then considered a potential cause, and a diagnosis was confirmed by serology.

Discussion: Some cases of CMV may present with nontypical lymph node enlargement patterns, such as the inguinal area. This must not be a reason for a missed diagnosis, and CMV must still be considered.

Conclusion: CMV can cause lymphadenopathy in various areas and various succession. CMV should be included in the differential diagnosis in cases such as this presented.

Keywords: cytomegalovirus, inguinal lymph nodes, lymphadenopathy

Cytomegalovirus Pretends to be an Acute Coronary Event

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CASE REPORT TEXT

Introduction: Cytomegalovirus (CMV) infection is a common herpesvirus infection with a pallet of possible presentations. Although it is most commonly asymptomatic and the usual symptoms are fever and fatigue, it can cause severe symptoms involving internal organs.

Case description: A 37-year-old male was admitted to the cardiovascular clinic with suspected acute coronary syndrome due to precordial chest pain and slightly elevated troponin levels. The ECG was normal and the echocardiogram showed nothing but concentric hypertrophy of the left ventricle. Coronary angiography excluded defects of the epicardial arteries. Broader findings showed mildly elevated liver enzymes with normal synthetic and excretory function of the liver. 2 weeks after the discharge from the hospital, the man returns to the ER with complaints of recurring fever in the past 10 days up to 39°C in the evening. He had no other symptoms and there was nothing significant on the exam. The laboratory tests revealed a progression of the previously discovered hepatocellular lesion. This led the team to suspect a hepatotropic virus infection and serology tests confirmed a CMV infection.

Discussion: As the coronary syndrome was excluded, other tests were done in the direction to rule out other common chest pain causes. Later, the discovery of the CMV infection led to the conclusion that it was the cause of the patient's chest pain.

Conclusion: Acute chest pain appears to be one of many uncommon presentations of the CMV infection. This case reminds us that it is important to keep in mind that even the cases that appear to be the easiest to diagnose, such as acute chest pain with elevated heart enzymes, may fool us to go in the wrong direction.

Keywords: acute chest pain, cytomegalovirus, liver enzymes

POSTER SESSION

1b

Neonatal Sepsis Prediction

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ABSTRACT TEXT

Background: Sepsis is a life-threatening response to an infection. Early signs of sepsis in a neonate are often subtle and non-specific, and the clinical course is rapid and fulminant. To this day, many diagnostic markers of infection have been investigated in pursue of an ideal one with the highest prognostic significance.

Aim: Our research aimed to analyze diagnostic markers that could differentiate neonates with sepsis from those without sepsis and to build an application that could calculate the probability of sepsis in a neonate.

Methods: A retrospective clinical study was conducted on 497 neonates who were treated at the Clinical Department of Neonatology of the University Children's Hospital in Ljubljana from 2007 to 2021. The neonates with a diagnosis of sepsis were separated based on their blood culture results, clinical signs, and laboratory markers of infection. They were divided into three groups: the proven, probable, and suspected sepsis group. In addition, the influence of perinatal factors was observed. Based on the data collected, variables with the highest importance values were selected for model training. Then, several machine learning models for prognosticating neonatal sepsis were built and the best-performing model was embedded into an online application.

Results: Out of all variables tested, thirteen showed the highest diagnostic importance. Those were gender, type of childbirth delivery, 5-minute Apgar score, gestational age, birth weight, age of onset, leukocyte count, immature neutrophile percentage, lymphocyte percentage, presence of toxic granulations, thrombocyte count, serum CRP, and PCT concentrations. The created online application predicts the probability of sepsis by combining the data values of these variables.

Conclusion: The research findings can be applied to our online application which could enable earlier and more precise diagnosis of neonatal sepsis in the future. The application for neonatal sepsis prediction is accessible at: <https://sepsa- napoved.herokuapp.com/>

Keywords: neonatal sepsis, diagnostic markers of infection, prediction of sepsis

Massive Thrombosis Of The Basilar Artery In A Child: COVID-19 As An Etiological Factor?

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CASE REPORT TEXT

Introduction: One of the well-known complications of COVID-19 is a hypercoagulable state that in a certain number of patients can be presented as venous and arterial thrombosis. This case report aims to present a COVID-19 infection as one of the possible causes of massive thrombosis of the basilar artery in our patient.

Case description: An 8-year-old boy presented to the Emergency department due to a headache followed by a rapid onset of impaired consciousness and extreme hypertension. The patient was recently diagnosed with Crohn's disease and was treated with corticosteroids as per protocol. Family history was positive for thromboembolisms. He was tested for COVID due to the local guidelines prior to admission, and the test was positive. CT angiography of the brain showed massive thrombosis of the basilar artery with hypoxic areas, signs of diffuse cerebral edema, and absent perfusion of the posterior circulation of the brain. Despite measures of intensive treatment, his condition progressively worsened and consequently, it led to hemodynamic instability and malignant cerebral edema, and death. An extensive diagnostic evaluation revealed he was heterozygote for PAI-1(4G/5G) and MTFHR C677T sequence variants.

Discussion: This case raises the question of the possible association between COVID-19 infection in children and the rare, but devastating complications due to the hypercoagulability in genetically predisposed individuals.

Conclusion: COVID-19, as a hypercoagulable state, leads to an increased risk of thrombosis, even in children. In the case of patients with a genetically determined predisposition to the development of thrombophilia coupled with COVID-19 infection, the risk of developing severe complications is even greater. In our case, it caused thrombosis of the basilar artery, and ultimately, death.

Keywords: COVID-19, Thrombosis, Basilar artery, Thrombophilia, Pediatric

Characteristics of Cardiac Function Indicators Determined by Tissue Doppler Imaging in Premature Newborns

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ABSTRACT TEXT

Background: Tissue Doppler (TDI) techniques are used to assess myocardial performance. Their application in pediatrics and neonatology is sporadic and insufficiently studied.

Aim: To determine the means of left ventricular performance indicators using the pwTDI technique and to examine their dynamics in preterm infants.

Methods: A retrospective study included preterm infants of postnatal age for up to 7 days. Patients were divided into two groups, depending on gestational age. Standard pwTDI parameters were measured. The values were compared between the groups and correlated in relation to age and application of respiratory support

Results: 36 patients were included: Group 1 – 15, Group 2 - 21. The average values of s' , e' , a' were: Group 1 - 4.18 ± 1.01 cm / s; 3.72 ± 0.34 cm / s; 3.72 ± 0.34 cm / s; Group 2 - 4.06 ± 1.22 cm / s; 4.82 ± 0.28 cm / s, 4.06 ± 0.94 cm / s (respectively). For variables s' and a' no statistically significant difference was observed, while values of e' were statistically significant (Student's t-test: $p = 0.04$). No statistically significant difference was observed between the values of s' , e' and a' in patients who were on respiratory support and those who were not.

Conclusion: The values of e' depend, while s' and a' don't depend on gestational age. Indicators of left ventricular function don't change during the first week of life. The use of respiratory support doesn't affect the value of these indicators.

Keywords: premature newborn; tissue Doppler; pwTDI echocardiography

Pyogenic spondylitis with L3 paravertebral abscess: a case report

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CASE REPORT TEXT

Introduction: A large variety of bacterial strands found in our physiological flora can cause disturbances in various organ systems, in case of immunological imbalance. Such is the case in pyogenic spondylitis (PS), which is a general term for an infection of the spine (pertaining to epidural space, paraspinal tissue, intervertebral discs, or vertebrae).

Case description: A 43-year-old female patient was admitted to the Emergency Department (on the 10th of June) with previously diagnosed PS, complaining of abdominal and lower back pain that spread to the right leg. An initial computer tomography (CT) scan of the thorax and abdomen confirmed an osteolytic lesion with dimensions 45 x 19 x 100 mm at the level of L3, alongside of extensive paravertebral soft tissue abscess. A CT scan of the brain performed on the day of admission showed signs of pneumocephalus. The patient underwent emergency surgery to evacuate and drain the paravertebral abscess. Microbiological analysis of intraoperative swab of the abscess isolated *Streptococcus constellatus*. Based on the sensitivity test, the patient was treated with metronidazole, fluconazole, ampicillin, and cefepime. Post-operative magnetic resonance imaging (MRI) of the spine showed inflammatory changes of paravertebral musculature with intraspinal propagation, in the sense of epidural empyema. The MRI scan was performed two weeks after surgery, radiological findings were unchanged. A follow-up CT of the brain showed total regression of earlier identified pneumocephalus. Upon improvement in clinical and laboratory parameters, the patient was transferred to another institution for the continuation of ampicillin therapy (6 x 3g I.V.) for 11 days, physical therapy, and a recommended follow-up MRI of the whole spine.

Discussion: The main source of infection in PS is the hematogenous spread of the pathogen, less commonly via direct invasion or iatrogenic inoculation. Risk factors include obesity, previous spinal surgery, etc.

Conclusion: PS is a rare entity, the incidence of which is rising, due to the availability of more effective diagnostic tools. It requires a high index of suspicion.

Keywords: pyogenic spondylitis, *Streptococcus constellatus*, paravertebral abscess

Association Between Thyroid Cancer Management And Breast Cancer

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ABSTRACT TEXT

Background: Breast cancer and thyroid cancer are commonly encountered malignancies in women. Increased risk of breast cancer in a follow-up period of thyroid cancer or vice versa has been reported. Radioactive iodine therapy (RAI), which has been a common adjuvant therapy for the management of thyroid cancer, typically following surgery, has been the target of debate due to side effects such as sialadenitis, taste loss, and, most critically second primary malignancy.

Aim: The aim is to investigate the clinicopathological characteristics of these malignancies and the possible influence of radioactive iodine therapy on the occurrence of breast cancer as a second primary malignancy in patients with thyroid carcinoma.

Methods: A retrospective study was performed on 35 female patients who were treated at the Oncology Institute of Vojvodina. These patients had both breast and thyroid cancer but they differed on whether their first malignancy was breast cancer (n=17) or thyroid cancer (n=18) and then got sick of the second malignancy during the follow-up period. Descriptive statistics and Mann–the Whitney U test was conducted for analyzing the results.

Results: The mean age of patients when diagnosed with their first cancer was 50 years (ranging from 20-71). The most common pathohistological type of breast cancer was ductal carcinoma (71.0%) while the most common pathohistological type of thyroid cancer was papillary carcinoma (74.3%). Among patients who had thyroid cancer as their first malignancy number of months until the diagnosis of breast cancer in patients who received (MD=56) radioactive iodine treatment was statistically significantly lower compared to patients who didn't receive (MD=145) radioactive iodine therapy (U=14.0, Z=-2.06, p=0.039).

Conclusion: Ductal breast carcinoma and papillary thyroid carcinoma are the most common pathohistological types of these cancers worldwide and in our study. Even though all patients included in our study with the first malignancy on the thyroid gland eventually got sick of breast cancer, radioactive iodine treatment could be the potential cause for the earlier occurrence of breast cancer.

Keywords: Breast cancer, thyroid cancer, radioactive iodine.

Fatigue As The Only Symptom Of Thyroid Disorder: A Case Report

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CASE REPORT TEXT

Introduction: Thyroid gland diseases affect women three times more often than men. Symptoms are usually difficulty breathing, talking, swallowing, and also a variety of systemic symptoms. This case report aims to illustrate an atypical manifestation of worrisome malignancy.

Case Report: We present a 42-year-old female whose only symptom was fatigue on exertion. In November 2021, the patient was referred to take blood tests. Since the N-terminal proBrain Natriuretic Peptide was in order, further testing followed. In March 2022, the results showed increased anti-thyroglobulin antibodies (anti-Tg), but anti-thyroid peroxidase antibodies, thyroid-stimulating hormone (TSH), triiodothyronine (T3), and thyroxine (T4) were in referent values. The ultrasound detected non-toxic multinodular goiter, calcified vascularized nodules in the right node, and peripherally vascularized cystic nodules in the left lobe, as well as bilateral lymph node enlargement. Cytological examination confirmed multicentric papillary thyroid carcinoma, metastatic lymph nodes, and Hashimoto's thyroiditis. Complete thyroidectomy and extirpation of the lymph nodes on the right side of the neck were scheduled in April. The surgery went as planned. Parathyroid glands and recurrent laryngeal nerve were spared. Postoperative blood tests showed high TSH, low T3, and T4 which indicated that the patient developed hypothyroidism. The following therapy included radioiodine ablation, metoclopramide, and levothyroxine. The control in August showed regular hormone levels.

Discussion: Even though thyroid diseases are common, this case's outcome is surprising because the symptoms are usually specific and blood tests reveal more than just increased anti-Tg. Some studies connect Hashimoto's thyroiditis with higher malignancy potential, but further research is required.

Conclusion: The importance of this case is to point out that sometimes typical clinical features may not be present. Even seemingly insignificant symptoms should always be furtherly examined in order to make the right diagnosis in time and prevent disease progression.

Keywords: fatigue, thyroid cancer, Hashimoto's thyroiditis

Analysis of Cost-Savings after the Approval of Follitropin Alfa Biosimilars in Croatia

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ABSTRACT TEXT:

Background: Follitropin alfa is an analogue to follicle-stimulating hormone, used as fertility medication to promote ovulation in procedures such as in vitro fertilization or embryo transfer. Decreased male fertility, advanced maternal age, growing availability and success rates are factors contributing to the increasing usage of assisted reproductive technology methods, which often include gonadotropins such as follitropin.

Aim: We aimed to investigate whether the approval of follitropin alfa biosimilars impacted the drug's financial consumption and estimate the potential cost savings in Croatia.

Methods: The data were collected from the drug utilization reports published annually by the Croatian Agency for Medical Products and Medical Devices. Data regarding total annual cost and utilization of follitropin alfa in the period of 2010-2020 were used, measured as a defined daily dose (DDD)/1000 inhabitants/day. The savings made after the approval of the first biosimilar in 2013 were estimated via economic modelling in R (v.4.2.1). In the analysis, we modelled a plausible comparative scenario in which no biosimilars were introduced into the market and the price of follitropin alfa was stable at 223.1234 kn/DDD (cost of 1 DDD in 2013 before the introduction of biosimilars) in the simulated years (2014-2020). The model presumed that drug utilization remained the same in the simulated scenario.

Results: After the first biosimilar approval, the cost of 1 DDD steadily decreased to a low of 173.45 kn/DDD in 2020 (22% decrease), resulting in a significant difference between simulated and real costs per year in our model. The average cost-savings were 1 728 433 kn/year, with the greatest savings estimated in 2019 amounting to 2 906 915 kn. Our model estimated a substantial total savings of 12 099 028 kn in the 7 years (2014-2020).

Conclusion: The approval of follitropin alfa biosimilars significantly lowered the drug's financial consumption and resulted in cost savings, thus highlighting the significance of biosimilars.

Keywords: follitropin alfa, biosimilars, economic modelling, cost-savings

Jejunal Lipoma Causing Intussusception in an Adult

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CASE REPORT TEXT

Introduction: Intestinal intussusception represents an invagination of the proximal segment of the bowel into the lumen of the adjacent distal segment. Adult intussusception is seen very rarely. It occurs at only about 5% of all intussusceptions with an incidence of 1-3 per million a year. Unlike in children, intussusception in adults is in most cases caused by an underlying tumor.

Case description: A 28-year-old male patient with no past medical history presented at our emergency department complaining of colicky, intermittent epigastric pain for the last month. The patient underwent native computed tomography (CT) examination which revealed a “target sign” at the level of the small intestine, the specific sign of intussusception. During explorative laparotomy, enteric intussusception of the jejunum was found. Reduction of intussuscepted small bowel segment revealed intraluminal tumor as a cause of intussusception without signs of bowel ischemia. The small intestine segment with the tumor was resected and intestinal continuity was established creating a hand-sewn laterolateral enteroenteral anastomosis. Pathohistological examination confirmed a benign lipoma.

Discussion: Non-specific clinical features and the rareness of disease in adults make diagnosis difficult. Long-standing colicky abdominal pain, nausea, vomiting, distention, and gastrointestinal tract bleeding are common but nonspecific. The diagnosis is often made at the time of laparotomy. The most sensitive study to diagnose intussusceptions is abdominal CT. The treatment plan for adult intussusception consists of segmental resection and primary restoration of the continuity of the gastrointestinal tract. Whether the intussusception should be reduced or not before resection remains controversial.

Conclusion: Small bowel obstruction caused by jejunal lipoma in adults is an extremely rare condition. It is very important to keep in mind this rare condition when you treat adult patients who have chronic colicky abdominal pain. An early CT scan can confirm the diagnosis so that patient can be treated before serious complications occur.

Keywords: Ileus; Intussusception; Lipoma

Tongue cancer: early-stage, poor outcome?

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CASE REPORT TEXT

Introduction: Oral cavity cancer is the 11th most common malignancy in the world, with over 90 % being squamous cell carcinoma (SCC). The most common subsites are lips and tongue.

Case description: A 58-year-old male presented to the otorhinolaryngology department with a tongue mass first noticed a year ago. The patient had a history of alcohol intake and 22,5 pack-years regarding smoking. Multi-Slice Computed Tomography (MSCT) showed a lesion on the lateral left half of the tongue (cT1N0). Surgery was performed: intraoral tumor excision with selective neck dissection I-III on the left side. Pathologically tumor was classified as pT2N0, with size 3x2,5x0,5 cm, histological grade II and negative surgical margins. There were no signs of perineural or lymphovascular invasion. No adjuvant therapy was prescribed. The patient underwent monthly check-ups. Six months after the surgery the patient presented with palpable nodes on the left side of the neck, which have not been present a month earlier on clinical or ultrasound exam. MSCT revealed recurrent, large, infiltrating tumor of the oral cavity, with multiple enlarged lymph nodes on both sides of the neck. Salvage surgery was performed and the tumor was staged as pT3N3b. The patient died two months after the second surgery with distant metastases.

Discussion: SCC of the oral cavity is staged according to the TNM system by the American Joint Committee for Cancer. In early-stage cancer, the cervical node metastasis rate is 20-50 %. Initial dissemination includes nodal groups I-III. NCCN Guidelines recommend surgery as a preferable treatment for T2N0 tongue cancer. The 5-year recurrence rate for the early tumor is 35 %.

Conclusion: Generally, early-stage tongue cancer has a good prognosis with a 5-year overall survival rate of 75-89%. The main reason for failure in early-stage cancer is a locoregional recurrence, and distant metastases are rare. Local recurrences are significantly easier to salvage than regional ones.

Keywords: early-stage cancer, hemiglossectomy, oral cavity cancer, recurrence

Ivan Mestrovic – The Artist And The Study Of Anatomy

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ABSTRACT TEXT

Background: While anatomy has been the pillar of basic medical sciences, it has also served as fundamental knowledge for the most eminent artists throughout history.

Aim: This study aimed to find data about the relationship of world-renowned sculptor Ivan Mestrovic (IM) with the study of anatomy when he at the age of 18 arrived in Vienna to pursue his education.

Methods: Correspondence sources and biographical works were reviewed.

Results: Anatomy lessons led by Professor Anton Ritter von Frisch (ARvF) at the Vienna Academy of Fine Arts that IM attended followed the tradition of the influential Viennese school of anatomy. IM's dedication to anatomy was rewarded with the best grade in his first academic year (1901/1902). Berta Zuckerkandl, well known Viennese writer and art critic who gathered a large circle of the most brilliant avant-garde artists and scientists, encouraged young promising sculptor IM to continue his education beyond Academy's anatomy classes. She arranged for IM to attend additional hospital anatomical dissections performed by her husband Emil Zuckerkandl, one of the most important anatomists ever. This further stirred up IM's interest and reinforced his anatomical excellence, enabling him to reproduce a 'Muskelmann' (anatomical model of human body muscles) with exceptional ease and accuracy. Correspondence also shows that IM used acquaintance with his former professor ARvF who was a leading Austrian urologist when a few years later he treated seriously ill famous poet Silvije Strahimir Kranjcevic. IM probably kept the closest personal relationship with Doctor Hermann Vinzenz Heller, the youngest of his anatomy professors and the esteemed author of works on anatomy for artists. IM praised his ability to be a professor but still remain an artist while teaching generations of students the significance of anatomical knowledge.

Conclusion: IM's knowledge of anatomy greatly contributed to his skill as an artist which was further reflected in his many masterpieces.

Keywords: anatomy, Mestrovic, art, Vienna, Zuckerkandl

Healthy nutrition knowledge of students of the University of Novi Sad

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ABSTRACT TEXT

Background: Healthy nutrition plays an important role in maintaining health, and preventing and treating diseases. Healthy life habits and proper nutrition affect the health of the student population. Nutrition knowledge is a significant indicator of understanding the concept of healthy nutrition, where a higher level of knowledge can lead to a more healthy diet.

Aim: This study aimed to examine students' knowledge about healthy nutrition.

Methods: The research was a cross-sectional study conducted using an online survey. Students from 7 faculties of the University of Novi Sad (Faculty of Medicine, Faculty of Science, Faculty of Technology, Faculty of Technical Sciences, Faculty of Agriculture, Faculty of Law, and Faculty of Philosophy) were included.

Results: In total, 417 students responded to the survey. Healthy nutrition knowledge levels significantly differed among students from different faculties with students of the Faculty of Technology with the highest and students of the Faculty of Philosophy with the lowest level. Regarding other topics, students of the Faculty of Medicine had the highest level of knowledge about the nutrition guidelines and health problems associated with unhealthy nutrition, while students of the Faculty of Technology had the highest level of knowledge about food groups and nutrients they contain and about proper food choice. A significantly high positive correlation between self-evaluated and assessed knowledge about healthy nutrition was found among students of all faculties. The total knowledge about healthy nutrition correlated uppermost with the domain of health problems associated with unhealthy nutrition in relation to the whole sample.

Conclusion: Advancement in nutritional educational programs can raise students' awareness of the importance of healthy nutrition leading to improvement in their students' nutritional habits.

Keywords: Nutrition; Knowledge; Health

Effects of sulfur-containing amino acids on butyrylcholinesterase activity in rats' digestive tract

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ABSTRACT TEXT

Background: Butyrylcholinesterase belongs to the serine-hydrolase enzyme family, which catalyzes the hydrolysis reaction of choline esters and plays a role in the metabolism of choline esters from food, as well as in the metabolism of drugs and ghrelin. Increased amounts of methionine lead to hyperhomocysteinemia and oxidative stress. N-acetyl-L-cysteine is an amino acid derived from L-cysteine, and both amino acids exhibit anti-inflammatory and antioxidative properties.

Aim: Our study aimed to explore the effects of sulfur-containing amino acids on the activity of butyrylcholinesterase in duodenum, ileum, colon, and liver tissue in rats.

Methods: In our study, 32 male Wistar albino rats were randomly divided into four groups (Control (K), Methionine (M), Cysteine (C), N-acetyl-L-cysteine (N) group) and treated subchronically for 21 days by intraperitoneal injections. They received: K group – saline (1ml/day); M group – methionine (0.8 mmol/kg/day); C group – methionine (0.8 mmol/kg/day) and L-cysteine (7 mg/kg/day); N group – methionine (0.8 mmol/kg/day) and N-acetyl-L-cysteine (50 mg/kg/day). After the treatment, butyrylcholinesterase activity was measured according to the Ellman method in rats' duodenum, ileum, colon, and liver tissue.

Results: Butyrylcholinesterase activity in the rat duodenum was statistically significantly increased in the M group vs. K group ($p < 0.05$), while in the N group it was elevated compared to the M group ($p < 0.05$). It was also observed that butyrylcholinesterase activity was decreased in the M group vs. K group ($p < 0.05$), while it was increased in the N group vs. M group ($p < 0.05$), in ileum tissues. Significantly increased butyrylcholinesterase activity was measured in the C group vs. M group in rat colon tissues ($p < 0.05$).

Conclusion: Administration of L-cysteine and N-acetyl-L-cysteine have increased butyrylcholinesterase activity in the corresponding structures. Methionine has increased butyrylcholinesterase in the duodenum and has decreased enzyme activity in the ileum. Cysteine administration has increased enzyme activity in the colon.

Keywords: Butyrylcholinesterase; Digestive tract; Methionine; L-cysteine; N-acetyl-L-cysteine

Conversion of osteosynthesis in open shin refracture with a. tibialis posterior displacement: a case report

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CASE REPORT TEXT

Introduction: An open/ compound fracture is a type of fracture where the broken bone lacerates the skin. Such fractures vary in severity (degree of soft tissue, nerve, and vessel damage) and require treatment via operative treatment by way of either internal or external fixation, also known as osteosynthesis.

Case description: A 22 – year – the old male patient was admitted to the Emergency Department (ED; 3rd of June), having been injured in a motorcycle accident. He was immobilized with Schanz's collar and given 100 mg of Tramadol. Upon physical examination, there were visible open fractures on the right shin (3rd degree) with according skin defects and excoriation of the right knee. A preoperative X-ray of the right leg confirmed a multifragmentary fracture of the middle third of the right tibia and fibula. Later, the patient underwent surgery where the shin was externally fixated. Postoperative X-ray showed that the bones were healing properly. He was treated in the Trauma ward with antithrombotic and antibiotic (crystal penicillin, clindamycin, etc.) therapy, went to physical therapy, and later was released home. Three weeks later (28th of June), he was admitted to the ED once again after suffering a fall and injury of the same leg. The external fixator was visibly bent and the right shin was deformed. Pulsations of the posterior tibial artery were absent, so emergency surgery was performed on the same day. Due to possible vascular damage, low – molecular – weight heparin was administered for the next 7 days. Afterward, a conversion of osteosynthesis was performed. The X-ray was revisited after the procedure and was clear. The patient was released for at-home care and advised to continue physical and antibiotic (clindamycin) therapy, taking acetylsalicylic acid (150 mg) daily.

Discussion: The primary goal of external fixation is to maintain the alignment, rotation, and length of the extremity. Such procedures are relatively safe and minimally invasive but are contraindicated in fractures with gross contamination.

Conclusion: In conclusion, this type of procedure plays a vital role in orthopedic surgery by providing a way of definitive or temporary fixation.

Keywords: osteosynthesis, external fixator, open fracture

Pedobarographic Monitoring Of The Effectiveness Of Self-Centration After Stable-Elastic Treatment For Patients With Unstable Ankle Fractures

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ABSTRACT TEXT

Background: Ankle fractures with syndesmosis damage are the most difficult to diagnose and treat; challenges occur in up to 18% of cases. A plate with a screw remains the traditional way to stabilize the ankle fracture. The stable-elastic hybrid method combines intramedullary nail with an elastic band to restore distal syndesmosis. Foot load depends on surgical therapy and impacts the rehabilitation process and functional outcome.

Aim: This study aims to determine the effectiveness of self-centration during ankle joint treatment using the stable-elastic hybrid system (SEHS), based on the results of the pedobarographic analysis (PA).

Methods: Sample size - 36 patients (26 – main group (MG)), (10-control group (CG)). Inclusion criteria: males and females aged 35-55 y.o. with 44B2.1-B2.3 and C1.1-C2.3 (AO/ASIF classification) fractures. The MG is treated with a SEHS (patent №134463 Ukraine 25.05.2019), the CG - by plate osteosynthesis, and a position screw. 4 follow-ups (FU): 14±3d, 42±3d, 56±3d, 168±3d. Note: CG started the rehabilitation process during the 3rd and 4th FUs. PA was conducted using the Caproon podologiee device. Comparative and parametric analyses were conducted using Statistica 6.0 Software.

Results: The results of the static and dynamic parameters of the study demonstrate that the SEHS shortens the post-operation period. In the static parameters, the average foot area on the 56th day is better for the MG and results in a difference of 1,3 times ($p < 0,001$). On the 168th day, the difference decreases to 1,2 times ($p < 0,001$). Considering dynamic parameters, the MG also demonstrates better results; the double support phase shortens to 0,63 times ($p < 0,001$) in comparison to the CG.

Conclusion: The self-centering SEHS accelerates the static and dynamic load in the postoperative period and reduces the duration (up to 15-20th day after surgery) of rehabilitation of patients.

Keywords: self-centration, stable-elastic treatment, pedobarography, ankle fracture

POSTER SESSION

II

Prevalence of Smoking Tobacco Among Students of Faculty of Medicine

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ABSTRACT TEXT

Background: Research has shown that the prevalence of smoking tobacco in a population depends on applying for competent prevention programs. These programs entail the active participation of trained health care workers; therefore, it is important to assess their attitudes and behaviors, starting with the students of the Faculty of Medicine.

Aim: To determine the prevalence of tobacco products, attitudes, and beliefs related to tobacco use among the Faculty of Medicine students.

Methods: The research was conducted among the students of the Faculty of Medicine of UCG using the Global Health Professions Student Survey, which has been adjusted to the needs of this research. The sample group included 822 students from different courses: medicine, pharmacy, dentistry, and nursing. For the statistical processing, descriptive and nonparametric methods were used, along with multivariate analysis. The data were analyzed using SPSS statistical software.

Results: The prevalence of tobacco product use was 25%, with 9% of students using tobacco products daily. Most students believe smoking in public spaces should be banned; however, believing that such a ban was unnecessary was a lot more common among smokers. Additionally, smokers believe that health care workers do not have to be non-smokers to be motivated to conduct activities promoting the adverse effects of tobacco on health. However, students who are smokers are more likely to believe that it is unnecessary to focus on training future health care workers in promoting smoking prevention.

Conclusion: The research showed that the smoking status of students of the Faculty of Medicine influences their attitudes, beliefs, and values regarding the use of tobacco products. However, there are apparent differences in attitudes between smokers and non-smokers. Therefore, it is important to train students to modify their behaviors to positively influence patients' behaviors.

Keywords: tobacco, smoking, students

The Effect Of Deep Brain Stimulation In The Treatment Of Meige Syndrome

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CASE REPORT TEXT

Introduction: Craniofacial dystonia, commonly called Meige's syndrome, is a manifestation of segmental dystonia in which patients are clinically present with blepharospasm, facial and oromandibular dystonia, and cervical dystonia. Medical treatment is demanding, and often unsuccessful, because for that reason high-frequency deep brain stimulation (DBS) implanted in the internal globus pallidus or subthalamic nucleus is a proven method that primarily improves motor symptoms. Therefore, the aim of this case is to present the effect of deep brain stimulation on the quality of life of a patient with Meige syndrome.

Case description: The 50-year-old patient developed symptoms in the form of blepharospasm, spasms of the jaw, neck muscles, and vocal cords. After exhaustive diagnostic methods, he was diagnosed with segmental dystonia, the so-called Meige syndrome. The patient was treated with various medicinal methods and botulinum toxin, but the symptoms were still present. To improve the patient's quality of life, DBS was indicated. One year after the electrode implantation surgery, the success was evident. The Burk-Fahn-Marsden dystonia rating scale (BFMDRS) supports the good effect of DBS. Namely, our patient's score on the BFMDRS M (motor) before surgery was 25, and after surgery, it was 6 (76% improvement), and for the second subscale, BFMDRS D (disability), it was 13 before, and 3 after DBS surgery (77% improvement). By improving speech and without involuntary facial movements, the patient was able to return to his daily activities with greater self-confidence.

Discussion: Although segmental dystonia is not an indication for DBS, this case proves that successful results can be achieved using this method.

Conclusion: Medical treatment for Meige syndrome is challenging, so deep brain stimulation is an effective and justified method for the treatment of drug-resistant segmental dystonia and should be considered even when the values of the motor and disabling parts of the BFMDRS are lower.

Keywords: Meige syndrome, deep brain stimulation, globus pallidus interna, subthalamic nucleus

Therapy Refractory Depression - Challenges & Dilemmas

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CASE REPORT TEXT

Introduction: The ICD-10 classification defines recurrent depressive disorder (F33) as repeated episodes of depression. While antidepressants are the cornerstone of treatment, between 10-30% of the patients fail to achieve an adequate response to treatment and subsequently meet the criteria for therapy refractory depression.

Case description: A 54-year-old female was hospitalized due to the worsening of her psychiatric state despite regular therapy with several antidepressants without signs of improvement. She was diagnosed with a severe form of recurrent depressive disorder (MADRS=34, HDRS=28, Beck's Depression Inventory=43). Contributing to her depression is a history of childhood trauma consisting of daily physical abuse and lack of affection from her parents which led to the patient using benzodiazepines at age 15. Her father, who was an alcoholic, died when she was 21 years old. She got married at age 20 and throughout the course of the marriage, she was physically abused and raped until 2000 when her husband died. In 2001 she started receiving psychiatric treatment with frequent therapy changes which weren't successful. She has been a victim of harassment in the workplace which together with the recent mother's death led to further deterioration of her mental status. The patient is impulsive, anhedonic, hypobullic, and adynamic with disinterest in her family and constantly expresses suicidal thoughts. Despite all of this, the patient is cooperative and remains hopeful for positive improvements with treatment.

Discussion: Due to the early onset of first symptoms, traumatic experiences, and frequent changes in therapy, treating the patient's depression is difficult. In Croatia, esketamine was recently approved to treat severe pharmacoresistant depression. The patient will undergo Cognitive-Behavioral treatment. In case of failure, additional options are Transcranial Magnetic Stimulation or Electroconvulsive therapy.

Conclusion: Therapy refractory depression continues to represent one of the major challenges in modern psychiatry. Treatment strategies include pharmacological treatment coupled with augmentation methods accompanied by psychotherapeutic approaches.

Keywords: recurrent depressive disorder, pharmacoresistance, treatment-resistant depression

Anti-PL7 Antisynthetase Syndrome: A Rare Cause Of Autoimmune-Mediated Interstitial Lung Disease In Adult Patient - A Case Report

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CASE REPORT TEXT

Introduction: Antisynthetase syndrome (ASS) is a rare autoimmune condition. It is characterized by antibodies directed against an aminoacyl transfer RNA synthetase. Clinical features include interstitial lung disease (ILD), myositis, Raynaud's phenomenon, and arthritis.

Case report: A 71-year-old female was complaining of polyarthralgia dominantly in the wrist joints and morning stiffness for three months. Following ultrasound and laboratory testing, a seronegative rheumatoid arthritis diagnosis was made, and glucocorticoids were given. After nine months, the patient presented with persistent breathing difficulties and a fever for the last 15 days. According to the findings of a chest X-ray and CT scan, interstitial lung disease was diagnosed. After two months, due to the onset of muscle weakness and elevated values of serum creatine kinase, a biopsy of the deltoid muscle was performed, whose histological presentation speaks in favor of myositis. According to the findings of the myositis panel, a diagnosis of the antisynthetase syndrome anti-PL-7 was made and cyclophosphamide pulse therapy, along with standard glucocorticoid therapy, was started. After five months, when the dose of cyclophosphamide was reduced, a worsening of symptoms occurred, which is why rituximab was introduced into the therapy. Two months after the second dose, the patient was stable and was discharged to home care.

Discussion: ASS is a rare autoimmune condition with a prevalence of 0,56 /100 000 people. There are eight distinct forms based on the type of antibodies. The anti-PL7 antibody is present in only 3-4% of cases and is linked with lower survival. Only a few cases have been described so far. Patients with the antisynthetase syndrome may have corticosteroid-resistant myositis or ILD, frequently requiring additional immunosuppressive medications.

Conclusion: Antisynthetase syndrome with positive anti-PL-7 antibody is a rare, complex, and possibly life-threatening condition requiring careful diagnostic workup. The treatment approach should be aggressive immunosuppressive and biological medications with careful monitoring of vital organs.

Keywords: Anti-PL-7; Antisynthetase syndrome; Immunosuppressive treatment; Interstitial lung disease; Myositis

Hypercoagulability In IgA Nephropathy Patient: A Case Report

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CASE REPORT TEXT

Introduction: IgA nephropathy is an autoimmune disease that affects the glomeruli. The usual symptoms are proteinuria, hematuria, edema, and hypertension. The main goal of this case report is to emphasize the possibility of venous thrombosis due to hypercoagulability caused by nephrotic syndrome. We present a 66-year-old male patient diagnosed with IgA nephropathy.

Case description: In March 2021, the patient was referred to a urologist due to persistent hematuria and urinary hesitancy, which were the symptoms of prostate hyperplasia. In May 2021, he was examined by a nephrologist because of constant proteinuria and high creatinine levels. Kidney biopsy confirmed IgA nephropathy with 18% glomeruli, endocapillary proliferation in 18%, and necrosis in 4,5% glomeruli. Corticosteroid therapy was prescribed (Pozzi protocol). After the second dose of 1000 mg methylprednisolone, the patient was admitted to the emergency room. Symptoms were difficulty breathing, general weakness, and stabbing pain in the chest. A computed tomography angiogram indicated bilateral subsegmental pulmonary embolism as a complication of kidney disease and pulse therapy. D-dimers were increased (4,57 mgFEU/L), so now the therapy included warfarin and lower doses of corticosteroids. A few weeks later, stable creatinine levels were followed by proteinuria regression. Heart and lung examinations are in order, as well as kidney function. Nephrologist controls are scheduled every six weeks.

Discussion: In this case, IgA nephropathy is characterized by proteinuria, hematuria, and high creatinine levels, but no edema or hypertension symptomatology. However, a nephrotic syndrome caused pulmonary embolism, a rare, but possibly fatal complication which can be easily overlooked. Thromboembolic complications of nephrotic syndrome are found in 1 in 5 patients.

Conclusion: This case illustrates the importance of controlling prothrombin time due to increased coagulability factors in patients with nephrotic syndrome. With early diagnosis and proper therapy, life-threatening consequences can be avoided.

Keywords: IgA nephropathy, pulmonary embolism, hypercoagulability

Different Approaches For Managing Urolithiasis In Kidney Transplant Patient-case report

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CASE REPORT TEXT

Introduction: Urolithiasis is a rare urologic complication after kidney transplantation, and its diagnosis and treatment can be challenging for clinicians.

Case description: In our 52-year-old male patient, six months after transplantation, graft hydronephrosis was found. The patient had recurrent urinary tract infections followed by macrohematuria and an increase in creatinine levels. Computerized tomography revealed a 13 mm diameter stone in the ureter of the transplanted kidney as the cause of the obstruction. Percutaneous nephrostomy was placed in the graft for solving the obstruction. Initial endoscopic treatment with a retrograde approach failed. An antegrade approach over a previously placed nephrostomy was also not successful. By repeated retrograde approach, successful laser lithotripsy was performed. The patient is currently being monitored for six months and has stable graft function without hydronephrosis and stones.

Discussion: Allograft lithiasis after renal transplantation can either be the result of de novo lithiasis formation or can be donor-gifted. In general, there are no differences in the treatment of urolithiasis in the native kidney and transplanted kidney. However, the endoscopic approach in the treatment of graft ureteral stones is a technically demanding method due to the extra anatomical position of the transplanted kidney and ectopy of the ureterovesical junction. Still, minimally invasive endoscopic methods, with antegrade or retrograde approaches combined with lithotripsy, can give excellent results. Extracorporeal shock wave lithotripsy (ESWL) is considered the first choice for the treatment of stones <15 mm. Ureteroscopy (URS), including the antegrade and retrograde approach, may be considered for stones <20 mm, while percutaneous nephrolithotomy (PCNL) is most suitable for larger stones (> 20 mm).

Conclusion: Diagnosis and treatment of urolithiasis in kidney transplant patients is challenging and minimally invasive procedures are the treatment of the choice.

Keywords: Kidney transplantation; Ureterolithiasis; Ureteroscopy; Laser lithotripsy

Pyogenic arthritis as a complication of *Salmonella* infection

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CASE REPORT TEXT

Introduction: The *Salmonella* genus of bacteria is part of the family of gram-negative, facultative anaerobic bacteria Enterobacteriaceae, order Enterobacterales. The genus is divided into two groups, of which *Salmonella enterica* is pathogenic for humans. *Salmonella enterica* most often causes gastrointestinal disorders and bacteremia. Extragastrointestinal infections are rare.

Case description: A 70-year-old man was admitted to DH (District Hospital) Brčko, Bosnia, and Herzegovina, due to pain and edema of the right knee. Purulent content was discovered during a knee puncture. Due to worsening symptoms, he was transferred to GCH (General City Hospital) Vinkovci, Croatia, where pyogenic arthritis of the right knee was diagnosed and an arthrotomy was performed. *Salmonella enterica* serovar enteritidis was detected by biopsy. The patient was treated with appropriate anti-bacterial agents. Subsequent diagnosis revealed the left leg DVT (deep vein thrombosis), and the patient was transferred to the Department of Intensive Care Medicine, CHC (Clinical Hospital Centre) Osijek. Upon admission, the patient is in a severe general condition and, with mechanical ventilation and constant evacuation of pus, enters septic shock. During the stay in the hospital, a pseudoaneurysm of the artery of the right leg was diagnosed, which was surgically repaired, and an antibiogram for *Salmonella* was performed. Once the symptoms stabilized, the patient was transferred to the Department of Vascular Surgery for further treatment.

Discussion: The most common infections caused by *Salmonella* bacteria are localized in the digestive system, but in exceptional situations, the infection can occur in different organ systems. In the available literature, it is most often a question of postoperative superinfections caused by inadequate disinfection and improper care of the surgical wound. Medicines that act on the cell wall and membrane of bacteria are of great importance and often reduce the patient's fatal outcome to a minimum.

Conclusion: Although rare, *Salmonella* infection can cause severe systemic symptoms that, if inadequately treated, can lead to serious complications and death.

Keywords: postoperative infection, pyogenic arthritis, salmonella enteritidis

Lack of knowledge about rare erotomaniac delusions: De Clérambault's syndrome

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CASE REPORT TEXT

Introduction: De Clérambault syndrome is a rare delusional disorder of the erotomaniac type. It is characterized by ideas of loving and being loved by another, often well-known personality, which often leads to stalking behavior.

Case description: A 41-year-old woman, married and mother of a 16-year-old son, with a previous history of bipolar affective disorder, was admitted to the Department of Psychiatry due to decompensation that manifested itself in latent heteroaggressiveness with delusions and possible suicidality. During the examination, she was conscious, had mood oscillations, and occasionally inadequate effective accompaniment. Thought flow was occasionally disorganized, delusions of erotomaniac and religious content with signs of bizarreness and complete uncriticalness towards oneself and the situation were present. During the conversation, she states that she does not take the prescribed medications due to her religious views. The erotomaniac content, in this case, is based on the delusion of strong sexual feelings towards a certain doctor (higher social status and a well-known figure) and her beliefs that this man is deeply in love with her, although the alleged lover may never have spoken to her. She was treated with atypical antipsychotics and some non-pharmacological treatment methods.

Discussion: Erotomania is characterized by a "phantom lover", delusional and grandiose ideas of falling in love, often with a famous person, which leads to stalking behavior by the affected person. The unknown etiology and the specificity of the symptomatology call into question the possible involvement of genetic and epigenetic influence in addition to possible environmental factors such as recently experienced trauma, chronic exposure to stress, and media.

Conclusion: According to rarity and rather precise symptomatology, this syndrome should be investigated at the genetic level to determine certain heredity. Several meta-analyses should be made (whole genome studies), and young healthcare professionals should be informed about the existence of this syndrome.

Keywords: erotomania, De Clérambault's syndrome, bipolar disorder, rare disease

Complete Pathological Response To Treatment Of Metastatic Renal Cell Carcinoma With Delayed Nephrectomy After Immunotherapy: A Case Report

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CASE REPORT TEXT

Introduction: While most tumor centers accept the multimodal treatment of metastatic renal cell carcinoma, the timing of nephrectomy remains controversial. The following is a new case of complete pathological response to delayed nephrectomy after combination immunotherapy of advanced renal cell carcinoma.

Case description: A 62-year-old patient was admitted to the Department of Urology for surgery of a tumor in the lower half of the right kidney. Pathohistological analysis showed carcinoma of renal cell origin, clear cell type. Newly formed intrapulmonary nodules, highly suspected of metastases, were shown 13 months after surgery. A lesion in the kidney, that would in the opinion of the radiologist correspond to a recurrence, was first observed 26 months after surgery, with the progression of the number and size of lesions in both lungs. A decision was made to start treatment with immunotherapy with delayed radical nephrectomy. The patient received nivolumab and ipilimumab for 4 cycles every 3 weeks, then 4 cycles of nivolumab every 2 weeks. The right-sided radical nephrectomy was performed 2 months after immunotherapy. The pathohistological analysis determined that the suspected lesion was connective tissue, hyalinized and acellular in the form of the scar from the previous operation. The sustained parenchyma is dominated by tubulointerstitial inflammation and glomerulosclerosis without finding tumor tissue.

Discussion: So far, only primary nephrectomy followed by immunotherapy has been approved, making it the current standard therapy for metastatic renal cell carcinoma. Based on the results of the SURTIME study, delayed nephrectomy is a matter of new interest. According to the PubMed database, a complete pathological response using delayed nephrectomy has been described in only 5 patients in the United States and 11 patients in France.

Conclusion: A complete pathological response was achieved by delayed nephrectomy after immunotherapy in a patient with metastatic kidney cancer. Pathohistological analysis showed fibrotic changes with inflammatory infiltration without findings of tumor tissue.

Keywords: clear cell carcinoma; complete pathological response; delayed nephrectomy; immunotherapy

A Case Of Severe Psoriatic Arthritis Successfully Treated With Methotrexate

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CASE REPORT TEXT

Introduction: Psoriatic arthritis (PsA) is a systemic inflammatory arthritis, commonly involving peripheral joints and/or spine and dactylitis and enthesitis that occur in the context of skin psoriasis. Psoriasis is caused by an abnormality of keratinocytes and immune dysfunction. We present a case of psoriatic arthritis manifested by erythroderma, onychomycosis and polyarthritis, successfully treated with methotrexate.

Case description: A 58-year-old man was brought to our department in poor general condition, chills, fever, with swollen and painful proximal (PIP) and distal interphalangeal (DIP) joints and cutaneous presentation of erythroderma. 18 months prior, he was examined by a dermatologist for psoriatic morpohs, threated locally, without skin biopsy being performed. Clinical presentation included small and large painful and swollen joints. It was accompanied with nail changes (punctate depressions; onycholysis, hyperkeratosis), bilateral blepharoconjunctivitis, pitting edema (hands and feet) and erythroderma (almost entire surface of skin)

Discussion: The patient's clinical findings were indicative of PsA, however, to diagnose the patient it was necessary to determine: SR, CRP (159.5 mg/L), rheumatoid factors (neg.), plasma electrophoresis (hypergammaglobulinemia), RTG of hands, feet and sacroiliac joints (edema), ultrasound (normal) . ($17.3 \times 10^9/L$) was found as well. A skin biopsy was performed to rule out cutaneous T-cell lymphoma (mb. Sezary), along with immunophenotyping and diagnostic processing to rule out paraneoplastic syndrome. The patient was initially prescribed immunosuppressive therapy (cyclosporine A orally 3 mg/kg BW) and adequate skincare. After 40 days of initial immunosuppressive therapy skin lesions, pain and swelling of joints got worse, and patient was prescribed with methotrexate (15 mg per week) after which his skin lesions completely draw back.

Conclusion: Psoriatic arthritis is a serious inflammatory lifelong disease requiring aggressive immunosuppressive treatment. If associated with erythroderma, requires multidisciplinary treatment approach.

Keywords: psoriasis, erythroderma, arthritis, methotrexate.

Fungal Co-Infection In Critically Ill COVID-19 Patients Admitted To Intensive Care Unit (ICU)

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ABSTRACT TEXT

Background: The pandemic of coronavirus disease (COVID-19) has caused a huge number of patients admitted to the Intensive care unit (ICU), with the widespread use of invasive mechanical ventilation. Ventilator-associated pneumonia (VAP) is one of the most common complications in these patients with unfavorable outcomes. Bacterial and fungal were isolated from these patients' samples.

Aim: The study aims to evaluate fungal co-infection in COVID-19-positive patients admitted to ICU.

Methods: We retrospectively collected data on all COVID-19-positive patients admitted to ICU, who were on intensive mechanical ventilation for more than 48h. Bronchoalveolar lavage, urine sample, and blood sample were collected and analyzed. A quantity of 10⁴ colony-forming units (CFU)/mL was taken, according to Centre for Disease and Prevention recommendations.

Results: Of a total of 323 patients included in the study, we analyzed 176 patients (male 119 – 67,6%; female 57 – 32,4%). Co-infection was confirmed in 141 patients (80,1%) : fungal co-infection was isolated in 14 patients (9,92%); both fungal and bacterial in 57 patients (40,4%) and only bacterial in 70 patients (49,6%). The fungal co-infection that was isolated was *Candida* spp.

Conclusion: The fungal co-infection in critically ill COVID-19 patients is a serious problem in the current pandemic. Our study showed a high incidence of fungal co-infection in patients admitted to the ICU. Consequently, it is important to pay more attention to this.

Keywords: COVID-19, ICU, fungal co-infection, *Candida* spp

Nutritional Factors Associated With Postnatal Weight Gain in Preterm Infants Under 32 Gestational Weeks

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Abstract

Background: Extrauterine growth restriction is an identifiable marker for insufficient growth during hospitalization, common among preterm infants. Due to the different feeding types, and other possible factors there is a concern that some babies could have short and long term complications.

Aim: The study aimed to determine the influence of nutritional type and other risk factors for insufficient postnatal weight gain in preterm infants at the Pediatrics clinic of Sarajevo.

Methods: This was a cross-sectional study that included 123 preterm infants who were admitted at the Pediatrics clinic in Sarajevo between 1.01.2018. and 30.12.2018. The population included preterm infants born under 32 gestational weeks. Patients were categorized into two groups based on the type of nutrition. The results were compared with studies from the other authors.

Results: From 123 preterm infants included in this study, 59 patients were fed with mother's milk while 64 patients were fed with adapted milk formula. Descriptive statistic showed that there was no significant difference in two compared groups. 61 patient met the criteria for EUGR according to a cross-sectional model (weight at a given t-time <10th centile). To determine other factors related to insufficient postnatal weight gain regression model was created. As independent predictor for longer time interval needed to gain birth weight were: gestational week and days of hospitalization.

Conclusion: From descriptive statistics aspect we found no significant difference in weight gain model among the researched groups. Out of 123 preterm infants 61 were considered to have EUGR but there was no significant difference between nutritional type and insufficient postnatal weight gain. One of the main conclusions is that since percentage of patients considered EUGR was high, the focus should be put on improvement of nutritional approach. Other factors for related to poor weight gain were: week of gestation and days of hospitalization.

Keywords: preterm infant, postnatal weight gain, extrauterine growth restriction

OUR FACULTY

FACULTY OF MEDICINE

SARAJEVO

Studies at the Faculty of Medicine, University of Sarajevo, are renowned for the 70-year-long experience in teaching and modern education. The open-ness to including positive elements and experiences from teaching models of other medical schools into our curriculum has provided the study's compliance with the study plans of the neighboring countries, Western European countries and the European Union Directive.

The distribution of the courses throughout the semester and the forms of teaching delivered are adapted to a better receiving of the necessary knowledge and skills.

The teaching process is being conducted in 7 amphitheatres, 11 practical classrooms equipped with the latest equipment and 5 labs for expert diagnostic and scientific work. At clinics and in contact with patients, students acquire knowledge and familiarity with diseases, methods of their identification, prevention, treatment and rehabilitation.

Students are also being introduced to the basics of scientific research, and can participate in some of these activities. After graduation students obtain 360 ECTS, and receive a Medical Doctor title and are competent to work as a general practitioner (GP).



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