01. THE ASSESSMENT OF HYPOXIC ISCHEMIC BRAIN INJURY IN NEWBORNS WITH HISTORY OF PERINATAL ASPHYXIA USING MAGNETIC RESONANCE IMAGING

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BACKGROUND: HI is a significant brain injury due to perinatal asphyxia. The diagnosis of HI is based on neurological and radiological examinations. MRI can be utilized to evaluate extent of injury, while MRS is widely used to assess the level of metabolites in the brain. AIM: To select patients diagnosed with perinatal asphyxia and evaluate the frequency of MRI use, results, and associations with clinical symptoms and the neurologist’s conclusion regarding HI. METHODS: This retrospective study was developed by analysing the CCU database for medical histories of patients diagnosed with perinatal asphyxia (ICD-10 P21.0), born 37th week between 2015 and 2019. MS Excel, IBM SPSS Statistical 26.0 were used for data analysis. RESULTS: Of 172 patients, 82% (n = 141/172) underwent MRI, generally performed on the 5th day of life. 50.2% (n = 27/53) of MRI findings constituted to HI, while 29.7% (n = 106/333) had other findings. There was no statistically significant association between MRI findings and sequeles, perinatal pathologies, changes in muscle tone (p > 0.05). Of 23 patients with HIE-specific findings on MRI, cytotoxic oedema was detected in 87% (n = 20), while elevated lactate metabolite levels on MRS in 76.5% (n = 10). A statistically significant association between signs of cytotoxic oedema on MRI, elevated lactate metabolite levels on MRS, and diagnosis of HIE by a neurologist was found (p = 0.018, p = 0.001, respectively). There was a statistically significant association with 5-minute APGAR score (p = 0.005). CONCLUSION: Most patient with prenatal asphyxia underwent MRI. No statistically significant association between clinical symptoms and MRI findings was observed. The most characteristic findings of HIE were cytotoxic oedema and elevated lactate metabolite levels in the brain, which in turn had a statistically significant association with the neurologist’s conclusion. A statistically significant association was observed between MRI findings and 5-minute APGAR score.

Key words: hypoxic ischemic encephalopathy (HIE), magnetic resonance imaging (MRI), magnetic resonance spectroscopy (MRS), hypoxic ischemic injury (HI)

02. COVID-19 AND BREASTFEEDING; COULD THE VIRUS BE SPREAD THROUGH LACTATION?

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BACKGROUND: SARS-CoV-2 is a new betacoronavirus, a positive-sense single-stranded RNA-virus, member of the Coronaviridae family. The first cases were reported in Hubei province, China, and it continued spreading worldwide, currently having affected almost 55 million people, of whom more than 1.3 million died. AIM: To synthetize the literature written so far on this topic.

Methods: PubMed, SCOPUS, Embase have been reviewed. Search strategies included using keywords such as “SARS-CoV-2”, “COVID-19”, “breastfeeding”, “pregnancy”, “vertical transmission” etc. The articles obtained were case reports, case series and reviews on pregnant women infected with SARS-CoV-2, or of infants born of COVID-19-positive mothers. RESULTS: Despite not being extensively researched, vertical transmission through breast-milk seems unlikely. Case series showed that milk samples from mothers with COVID-19 were almost entirely negative. So far there have been only 8 recorded cases of viral shedding in milk samples, uncertain however of the viability of the particles. Furthermore, WHO and UNICEF strongly encourage commencing breastfeeding after parturition, underlining the benefits of lactation on both mother and infant. Moreover, some studies have proven the existence of IgG and IgA anti-SARS-CoV-2-antibodies in the maternal milk that could possibly play an important part in the neonate’s protection against the virus. CONCLUSION: Vertical transmission through lactation seems unlikely. However, for a better understanding of the topic, further larger-scale researches need to be performed in order to clarify a yet uncertain matter.

Keywords: breastfeeding, COVID-19, newborn, pregnancy, SARS-CoV-2

03. HOW MUCH DOES EXTENDED SCAN RANGE INFLUENCE THE EFFECTIVE DOSE RECEIVED DURING PAEDIATRIC HEAD COMPUTED TOMOGRAPHY?

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BACKGROUND: Head Computed Tomography (CT) is a standard choice for paediatric head trauma evaluation. In fear of missing a neck pathology, radiographers often include vertebræ in the scan, however guidelines suggest scanning only the target area, in order to reduce effective dose (ED) received during the examination. AIM: Our aim was to calculate extra ED received by the patient when excessive neck area is scanned. METHODS: This study included head CTs performed on infants (0-12 months old) after head trauma in a children hospital from January of 2016 until September of 2020. Scan ranges were measured, dose length products (DLPs) were registered and EDs received were calculated for the scanned area and for tissues exposed to scattered radiation. For each extra centimetre, extra DLPs and ED were calculated. A dedicated software was used for calculating the ED. RESULTS: Only two of 131 examinations were performed with an appropriately scanned neck area, the excess scan lengths of other 129 patients were 1-6 cm, the DLP range was 200-7672 mGy.cm. ED of the head slightly excess the annual natural background radiation, however, ED of the salivary glands, thyroid, bone marrow, skin and lymph nodes exceeded ED of the head 8.5, 4.9, 4.7, 2.8, 2.4 and 1.6 times, respectively. Each excess centimetre increased ED by 0.06-1.68 mSv, depending on the tissue type. CONCLUSION: Even with one extra centimetre scanned DLPs exceed Paediatric Diagnostic Reference Levels. ED from scattered radiation may be several times higher than the ED for the scanned area, although while increasing the scan range, the rise in secondary radiation is relatively low. The scan range is most easily changeable parameter to decrease CT doses.

Keywords: CT, paediatrics, dosimetry, effective dose

04. RISK FACTORS FOR NECROTIZING ENTEROCOLITIS IN MODERATELY PRETERM NEONATES: A FOUR-YEAR RETROSPECTIVE STUDY

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BACKGROUND: Necrotizing enterocolitis (NEC) is the most common gastrointestinal emergency in neonates, with extremely preterm neonates (EPT, 28 weeks) considered at highest risk. With increasing gestational age, the risk for NEC decreases. AIM: Our aim was to identify the risk factors for NEC in moderately preterm (MPT) neonates (28-34 weeks). METHODS: This is a retrospective study done in a four-year period from 2015 to 2019. The only inclusion criterion was clinical presentation and radiologic confirmation of NEC. Radiologically proven 53 NEC cases were observed in our study, however only risk factors for MPT neonates were assessed in this study. The Bell criteria which are based on clinical, radiologic and laboratory
findings were used to stage the severity of NEC cases. We reviewed the medical records of NEC cases in the aforementioned period on Neonatal intensive care unit (NICU) of Pediatric Clinic University Medical Center Sarajevo. RESULTS: Classification of infants according to gestational age is: EPT (< 28 weeks), MPT (28-34 weeks), LPT (35-37 weeks) and T (term neonates, >37 weeks). Majority of the infants with NEC were EPT (66%). The percentage of MPT, LPT, and term neonates with NEC was 22.6%, 7.5%, 3.7%, respectively. Mean gestational age at onset of NEC was 28 weeks, average age 12 days, and mean birth weight, 1460 g. The most common age (mode) at onset of NEC was 3 days. Of the survivors, 3% had recurrent disease 1-20 days after reintroduction of enteral feeding. Among MPT neonates, maternal hypertensive disorders (34%) and small for gestational age (SGA, 21%) were more common than in EPT neonates (10.5% and 4.2%, respectively). CONCLUSION: SGA MPT neonates born to mothers with hypertensive disorders should be closely monitored for signs of NEC. Identifying the risk factors specific to each gestational age may help clinicians to prevent NEC.

Keywords: NEC, maternal hypertension, neonates, Small for Gestational Age

05. OUTCOME OF SMALL FOR GESTATIONAL AGE INFANTS BORN BEFORE 32 GESTATIONAL WEEKS
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BACKGROUND: The most common cause of lethal outcomes in neonatal period is premature birth. When it is combined with small for gestational age (SGA), those infants have tendency to develop more complicated clinical course. AIM: Determine the impact of SGA on the outcome of preterm infants born between 28 and 32 gestational weeks. METHODS: The research was conducted in the NICU, Pediatric Clinic, UCC Sarajevo. The inclusion criterion was met by 371 patients. The informations on birth weight, gestational age, NEC, sepsis, PDA, congenital anomalies and outcome were collected. RESULTS: Out of 371 patients, 192 (51.75%) are males. According to the birth weight and gestational age, the respondents were divided into two groups: AGA and SGA. The SGA group consists of 17 patients (4.58%), with the average birth weight 854±71 g (500–1180 g) and average gestational age 29.95 weeks. As expected, there was a significant difference between SGA and AGA group considering birth weight (p<0.05). Statistically significant difference was found in the frequency of sepsis, persistent arterial duct (PDA) and necrotizing enterocolitis (NEC) (p<0.05). Comparison between genders did not reveal any significant difference in representations three listed conditions (p>0.05). Our data didn’t show significant difference in survival rate (p=0.052). This may be repercussion of a small SGA sample, but as it is very close to significant level, we can consider this parameter as significant. SGA infants who have died are 13.33 times more likely to have had NEC, CI 95% (1.07–166.37) and 6 times more likely to have had sepsis, CI 95% (0.72–49.84). The most common associated congenital anomaly was atrial septal defect (ASD). CONCLUSION: SGA is associated with several life-threatening illnesses, including sepsis, NEC and PDA, as well as undesirable outcome. These findings highlight the importance of detecting and preventing factors that may lead to SGA.

Key words: preterm infants, small for gestational age, appropriate for gestational age

06. ESTIMATE OF CERVICAL CANCER INCIDENCE IN ZENICA-DOBŽ CANTON
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BACKGROUND: Cervical cancer is a type of cancer that occurs uncontrolled growth of cells in the lower part of uterus. The risk factor for this malignant disease is infection caused by various strains of the human papillomavirus (HPV). Cervical cancer ranks second, both in frequency and mortality, from gynecological cancers, just after breast cancer. AIM: The study has 3 aims. First was to present the most common age interval for this malignant disease. Second was to resolve the prevalence of cervical cancer in Zenica-Dobo Canton by municipalities in period of 5 years. Third aim was to determine positive and negative Pap tests presence in the Canton through a given period and to compare it. METHODS: Used data were from the Public Health Institute of the Zenica-Dobo Canton and Central Laboratory for Screening of the Cantonal Hospital in Zenica. Five age groups of patients were considered. The number of reported cases of malignant neoplasm covers the period of 2007 to 2012. Descriptive statistical data was performed. Cervical swabs were used as a material in this research. The methods we came up with for statistics inserted the results of the Pap test. RESULTS: The interval from age 46 to 60 represent the period of the most frequent incidence of cervical cancer. The presence of malignant cervical neoplasm is the highest in the municipality of Zenica, Zavidovići, Telašć and Maglaj, comparing to the number of inhabitants and registered patients. There were 85.1% positive Pap tests and 14.9% positive Pap tests, which we have divided in 3 subgroups, 3 for negative diagnoses and 4 for positive diagnoses. CONCLUSION: The correct incidence of cervical cancer in Bosnia and Herzegovina is unknown as there is no National Cancer Register. Therefore, study has shown urgent require of quality registry for future prevention and treatment.

Keywords: cervical cancer, Human Papillomavirus, Pap test, incidence

07. MULTISYSTEM INFLAMMATORY SYNDROME IN CHILDREN ASSOCIATED WITH COVID-19 – META-ANALYSIS
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BACKGROUND: Multisystem inflammatory syndrome in children (MIS-C) is a serious condition that appears to be associated to coronavirus disease 2019 (COVID-19). Most children that become infected with COVID-19 virus have only a mild disease. But, in children who go on to develop MIS-C, some organs and tissues become severely inflammmated. AIM: Systematical analysis of demographics, clinical features, management and outcomes. METHODS: We conducted a metaanalysis searching PUBMED electronic database from June 14th to November 19th, 2020, following the Preferred Reporting items for Systematic Reviews and Metaanalyses guidelines. RESULTS: The term that was used for the search is Multisystem inflammatory syndrome in children. Out of 249 identified articles, 25 retrospective, prospective, and cohort studies with 1489 participants were included in the final analysis. Sixty-six percent of patients were previously healthy, and 33% percent had comorbidities (chronic lung diseases 66%; obesity 55%). SARS-CoV-2 infection was confirmed in most participants (53.9% had serology tests positive, 34.9% were positive by RT-PCR, and 3.9% had both). The most common clinical presentations of MIS-C were: fever, gastrointestinal symptoms, mucocutaneous signs, and hypotension. Prime laboratory parameters were elevated inflammatory markers (CRP, ESR, ferritin), leukocytosis with lymphopenia; mild anemia, thrombocytopenia, elevated transaminasines, abnormal coagulation (prolonged APTT, D-dimer), and elevated markers of cardiac dysfunction (BNP or pro-BNP and troponin). Currently, the most widely used medications to treat MIS-C are intravenous immunoglobulins (56% of patients), 5% enoxaparin, 35% corticosteroids, 29% acetylsalicylic acid, 6% recombinant IL-1 receptor antagonist and 2% monoclonal IL-6 receptor antibody. Seventeen patients (1.1%) had a lethal outcome. CONCLUSION: MIS-C is a serious and potentially life-threatening condition mostly described in previously healthy children. If recognised and treated on time, in most cases had a short-term favorable outcome. Questions for future studies still remain regarding risk factors, pathogenesis, management, and long-term outcome of MIS-C.

Keywords: MIS-C, SARS-CoV-2, COVID-19, Kawasaki disease, toxic shock syndrome.
BACKGROUND: Amiodarone can aggravate a myocardial injury in patients with an acute coronary syndrome (ACS), through both decreased oxygen supply and increased oxygen demand resulting from increased cardiac output. AIM: To investigate the effects of amiodarone on the cardiac function and cardiac damage in patients with ACS. METHODS: The study was designed as a cross-sectional, observational study which included 82 patients (mean age 68.1±12.1) presenting with ACS at the Clinical Center University of Latvia. STEMI was diagnosed in 43, NSTEMI in 25, and unstable angina in 13 patients. Blood pressure, blood count, C-reactive protein, and cardiac damage markers were determined. Amiodarone was defined if hemoglobin values were <12 g/dL for females and <13 g/dL for males. Doppler echocardiography was used to assess the left ventricular function (LVF). The degree of LV dysfunction was determined by ejection fraction (EF) as normal (>50%), mildly (41% to 50%), moderately (31% to 40%), or severely (<30%) decreased. RESULTS: The prevalence of amiodarone in ACS patients was 29.3%. Amiodarone was most frequent in patients with NSTEMI (54.3%) compared to patients with STEMI (35.0%) and unstable angina (20.8%).(n=11; p=0.003). The median EF was significantly lower in patients with amiodarone [0.35 (0.3-0.4)] vs. 0.4 (0.3-0.48); p=0.031]. The systolic dysfunction and combined systolic/diastolic dysfunction was present in 87.5% and 66.7% of patients with anemia (p=0.05). Hemoglobin values were significantly negatively associated with the degree of LV systolic dysfunction (r=-0.27; p<0.014). Patients with amiodarone had significantly higher CRP levels compared to patients without anemia [22.5 (10-35.1) vs. 8.5 (3-35.2) mg/L; p=0.023]. However, no significant difference in cardiac damage markers between patients with and w/o amiodarone was observed. CONCLUSION: Amiodarone is associated with both systolic and combined systolic/diastolic dysfunction suggesting that amiodarone might present an additional risk factor for comorbidities related to the left ventricular dysfunction in patients with an acute coronary syndrome.

Keywords: amiodarone, acute coronary syndrome, ST-segment elevation myocardial infarction, non ST-segment elevation myocardial infarction, unstable angina, C-reactive protein

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BACKGROUND: Direct current cardioversion (DCCV) for atrial fibrillation (AF) is commonly facilitated by antiarrhythmic drug (AAD) premedication, nevertheless early arrhythmia recurrence poses problem. Amiodarone is widely used, however its major adverse effects, i.e., pulmonary, thyroid, hepatic, ocular toxicity, should be emphasized, especially considering its potential for accumulation. AIM: To evaluate the effect of amiodarone premedication and the impact of its dosing regimen on short-term (one-month) sinus rhythm maintenance after DCCV in patients with persistent AF. METHODS: Study was conducted among patients with persistent AF hospitalized for elective DCCV in Latvian Centre of Cardiology. Enrolled patients were taking AADs preprocedurally, without long-term amiodarone intake history. Baseline interview with 1-month follow-up was conducted to compare amiodarone and other AADs effectiveness in sinus rhythm maintenance. For dose-dependent evaluation, total received amiodarone dose prior to DCCV was taken into account, with cutoff value of 4000 mg, corresponding to its common preprocedural regimen – 200 mg b.i.d. for 10 days. Software SPSS was used for statistical evaluation and logistic regression analysis was conducted to obtain main results (significance level α<0.05). RESULTS: Among 94 patients, one-month sinus rhythm maintenance rate was 80.9%, with corresponding value of 84.4% among amiodarone users specifically. Amiodarone intake (31.5%) patients prior to DCCV, compared to other AADs (sotalol, propafenone, ethacizine), demonstrated no statistically significant superiority for sinus rhythm maintenance likelihood (OR 1.964, 95%CI 0.685-5.632; p=0.209). When evaluating dose-dependent outcomes among patients taking amiodarone, total received dose exceeding 4000 mg did not result in statistically significantly improved sinus rhythm maintenance prospects (OR 1.160, 95%CI 0.30-4.475; p=0.829). CONCLUSION: Compared to other AADs, amiodarone premedication did not show any superiority, and, additionally, no beneficial effect on arrhythmia recurrence prevention in patients taking its higher dosage was established. RESULTS highlight necessity of thorough consideration of patient eligibility for alternative AADs, or, at least, of favour of amiodarone lower-dose therapy.

Keywords: atrial fibrillation, direct current cardioversion, antiarrhythmic drugs, amiodarone

10. METHOD OF DIFFERENTIAL DIAGNOSIS AND PROGNOSIS OF FAILURE ATTEMPTS OF EXTRACORPORAL FERTILIZATION IN WOMEN WITH THROMBOPHILIA

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BACKGROUND: Over recent years, the point of active discussion of researchers is the issue of improving IVF cycles effectiveness. Relation between thrombophilia and failed IVF attempts is actively discussed in the literature, but the mechanisms of thrombophilia effect on IVF results are still unclear. AIM: Development of a method for differential diagnosis and prognosis of failed IVF attempts based on determination of pathological markers of thrombophilia, which lead to pathological changes in endometrium and to impossibility of implantation of an embryo in uterine cavity. METHODS: We examined 48 women with thrombophilia participating in the IVF program. Twenty of them have failed IVF attempts (Group 1) and 28 women who became pregnant after IVF program (Group 2). Patients underwent laboratory studies: analysis of the hemostasis system, detection of genetic forms of thrombophilia by PCR (mutations of MTHFR-677T, polymorphism in Factor V Leiden, factor V Leiden mutation, polymorphism in PAI, polymorphism in the glycoprotein gene, polymorphism in the angiotensinogen gene, polymorphism in the fibrinogen gene, tissue plasminogen activator); determination of the concentration of AFA and coagulation factors in blood plasma. RESULTS: According to our data, we have found a significantly higher frequency of various structural forms of thrombophilia in patients of the Group 1 compared with the Group 2, namely: presence of a high percentage of AFA (20%), hyperhomocysteinemia (23.5 %), Factor V Leiden heterozygous mutations (18.0 %), MTHFR-C677T (60.0 %), PAI-1 polymorphism (70.0 %), heterozygous form of polymorphism ‘807 G/T of platelet receptor GP la’ (55.0 %), polymorphism ‘1166 A/C’ in angiotensin II receptor gene. CONCLUSIONS: Thus, hereditary thrombophilia predominates in patients with a history of failed IVF attempts, with severe mutations in the hemostasis genes being more common than in patients with high IVF efficacy.

Keywords: Extracorporeal Fertilization, thrombophilia, hemostasis genes, failure attempts of IVF
BACKGROUND: Medical products containing estrogen and progestogen components are, apart from their common use as hormonal contraception, also used to regulate the monthly cycle and to alleviate undesirable symptoms associated with it, as well as to treat other hormonal disorders. However, they cause many adverse effects. AIM: The aim of the research was to explore mental and sexual health adverse effects associated with single or multiple use of hormonal contraception in women. METHODS: Our research relies on a detailed online survey distributed among Polish women aged 17 to 55 years who use or once used hormonal contraception. Survey was divided into five sections as follows: characteristics of the respondent, hormonal products used mental state and mood changes while using hormonal contraceptives, sexual life and other side effects. Women were divided into subgroups depending on the type of gestagen component of the preparation used as well as on body mass index (BMI). RESULTS: In total, 629 women who have ever used hormonal contraception took part in our survey. Of them, 65.7% used the combined hormonal pill, 18.7% used progestin-only pill and a lower percentage of women used other contraceptives (vaginal ring 5.2%, intrauterine contraceptive device 5.7%, contraceptive patch 5.5%, implant and injection both 0.7%). 64.4% of women experienced mental or sexual side effects while using hormonal contraception. Most commonly mentioned adverse effects were decreased libido (40.6%) and mood swings (39.3%). 24.4% mentioned appearance of suicidal thoughts. Women who took medications containing desogestrel experienced the least side effects (20% reported no side effects) while women who took specific with etonogestrel reported the most side effects (74.4%) were female. Among them, 221 (28.3%) and 207 (26.5%) of students were from the second and third year, respectively. The preliminary results show adequate knowledge related to the mode of transmission, symptoms, and preventive measures of COVID-19, and nearly half of the students said they would not get vaccinated or would not get vaccinated except if it would be mandatory for travel, work, and attending to public events. CONCLUSION: Education about COVID-19 has shown its importance over the last 12 months and data that was acquired will greatly help create educational programs for our students focused on providing scientifically proven findings and breaking misconceptions about the disease and its vaccine.

Keywords: COVID-19, vaccine, knowledge, practice, attitude, university students.

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

BACKGROUND: Hormonal contraceptives impact the mood and sexual health of females. They also affect the respiratory movements and postprandial abdominal distension. Mid-upper arm circumference (MUAC) and ratio of mid-upper-arm circumference-to-height (AHtR) are independent of these factors and ought to be further investigated as indicators of central obesity in young adults. AIM: The aim of this study was to estimate relationship between MUAC and AHtR and other anthropometric measurements in order to determine whether these are superior in assessment of central obesity. METHODS: Study was established as cross-sectional study that included 252 students and was conducted from February to April 2019, at the Department of Human Physiology, Faculty of Medicine, University of Sarajevo. MUAC was measured with subject in standing position at the midpoint between the olecranon and acromial process on relaxed right arm. AHtR was calculated as MUAC (cm) to height (cm). Other parameters were performed following the WHO guidelines. Receiver operating characteristic (ROC) curve analysis was used to determine the suitable cut-off of MUAC and AHtR for central obesity. RESULTS: MUAC was significantly correlated with BMI (r=0.69; p<0.0005 in males, r=0.819; p<0.0005 in females) and WC (r=0.667; p<0.0005 in males, r=0.783, p<0.0005 in females). A significant positive correlations were seen between AHtR and BMI (r=0.699; p<0.0005 in males, r=0.801, p<0.0005 in females) and WC (r=0.660, p<0.0005 in males, and r=0.718, p<0.0005 in females). The best cut-off of MUAC to identify participants with central obesity were: 52.55 cm (AUC=0.870; p<0.0005) and . 26.95 cm (AUC=0.862; p<0.0005) among the males and females respectively. AHtR > 17.58 (AUC=0.847; p<0.0005) for males and > 16.55 (AUC=0.813; p<0.0005) for females were the optimal cut-off values to determine subjects with central obesity. CONCLUSION: Obtained results suggest that MUAC and AHtR should be considered as an alternative to WC in detecting central obesity among healthy young adults.

Keywords: Mid-upper arm circumference, Mid-upper-arm circumference-to-height ratio, Central obesity


BACKGROUND: Global pandemic of SARS-CoV-2 has shown the importance of educating each country’s citizens on measures to prevent the spread of the virus. Since the discovery of the COVID-19 vaccine, the next major step in controlling the pandemic is vaccination, with its own set of questions and misconceptions. AIM: The purpose of this study was to assess the knowledge, attitudes, and practices toward COVID-19 among students of the University of Sarajevo, as well as their knowledge and attitudes towards the COVID-19 vaccine and to identify factors related to them. METHODS: The cross-sectional study was conducted among students of the University of Sarajevo (February 5th to February 10th). Using purposive sampling, the link of specially designed anonymous questionnaire for this study was sent out to each faculty's student association then distributed among its students. Descriptive and inferential statistical analyses were performed using Microsoft Excel and SPSS statistical package, version 20. RESULTS: Out of 782 students who completed the online administered questionnaire, 579 (74.4%) were female. Among them, 221 (28.3%) and 207 (26.5%) of students were from the second and third year, respectively. The preliminary results show adequate knowledge related to the mode of transmission, symptoms, and preventive measures of COVID-19, and nearly half of the students said they would not get vaccinated or would not get vaccinated except if it would be mandatory for travel, work, and attending to public events. CONCLUSION: Education about COVID-19 has shown its importance over the last 12 months and data that was acquired will greatly help create educational programs for our students focused on providing scientifically proven findings and breaking misconceptions about the disease and its vaccine.

Keywords: antibiotics, resistance, global health, education

14. MID-UPPER ARM CIRCUMFERENCE AND MID-UPPER-ARM-TO-HEIGHT RATIO AS INDICATORS OF CENTRAL OBESITY IN HEALTHY YOUNG ADULTS: A CROSS-SECTIONAL STUDY FROM BOSNIA AND HERZEGOVINA

BACKGROUND: Global pandemic of SARS-CoV-2 has shown the importance of educating each country’s citizens on measures to prevent the spread of the virus. Since the discovery of the COVID-19 vaccine, the next major step in controlling the pandemic is vaccination, with its own set of questions and misconceptions. AIM: The purpose of this study was to assess the knowledge, attitudes, and practices toward COVID-19 among students of the University of Sarajevo, as well as their knowledge and attitudes towards the COVID-19 vaccine and to identify factors related to them. METHODS: The cross-sectional study was conducted among students of the University of Sarajevo (February 5th to February 10th). Using purposive sampling, the link of specially designed anonymous questionnaire for this study was sent out to each faculty's student association then distributed among its students. Descriptive and inferential statistical analyses were performed using Microsoft Excel and SPSS statistical package, version 20. RESULTS: Out of 782 students who completed the online administered questionnaire, 579 (74.4%) were female. Among them, 221 (28.3%) and 207 (26.5%) of students were from the second and third year, respectively. The preliminary results show adequate knowledge related to the mode of transmission, symptoms, and preventive measures of COVID-19, and nearly half of the students said they would not get vaccinated or would not get vaccinated except if it would be mandatory for travel, work, and attending to public events. CONCLUSION: Education about COVID-19 has shown its importance over the last 12 months and data that was acquired will greatly help create educational programs for our students focused on providing scientifically proven findings and breaking misconceptions about the disease and its vaccine.

Keywords: COVID-19, vaccine, knowledge, practice, attitude, university students.
16. IMPACT OF FAMILY FUNCTION AND PSYCHOSOCIAL FACTORS ON ANXIETY AND DEPRESSION IN POPULATION OF MEDICAL STUDENTS

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BACKGROUND: Anxiety and depression are common mental disorders in the student population. Among university students, mental disorders can cause different problems, affecting motivation, perception of self-worth, and basic daily activities. AIM: This study aimed to explore the presence of anxiety and depression symptoms in first-year medical students and investigate how family cohesion, flexibility, and psychosocial factors influence anxiety and depression. METHODS: 149 medical students (76.5% female and 23.5% male) took part in a cross-sectional study. All participants were in the first year of education at the Medical Faculty University of Sarajevo. The survey was administered via the sociodemographic questionnaire, Multidimensional Scale of Perceived Social Support, Rosenberg Self-esteem Scale, the short version of the Loneliness Scale, Family Adaptability & Cohesion Scale, Beck Anxiety Inventory, and Beck Depression Inventory. RESULTS: The prevalence of moderate and severe anxiety and depression symptoms among medical students was 53.8% and 19.5%, respectively. Female students experienced higher levels of anxiety and depression compared to their male colleagues. Students who practice sport activities at least once a week showed significantly lower anxiety and depression scores. Anxiety and depression were positively associated with loneliness and negatively associated with perceived social support from family and self-esteem. Depression was also negatively associated with family cohesion and adaptability. Moreover, the results revealed that family cohesion was a strong predictor of the severity of depression symptoms. CONCLUSION: This study shows that variables such as gender, sports activities, feeling of loneliness, low self-esteem, and perceived social support from family play an important role in the development of anxiety and depression among medical students. Family environment, especially cohesion, is a strong predictor of depressive symptoms. This study raises awareness about mental disorders in medical students, especially anxiety and depressive, and invites the placement of these problems among the top priorities of public health policies.

Keywords: anxiety, depression, self-esteem, cohesion, students

17. MULTIPLE SYSTEM ATROPHY - CASE REPORT

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INTRODUCTION: Multiple system atrophy is an adult onset, fatal neurodegenerative disease characterized by progressive autonomic failure, parkinsonian and/or cerebellar features with pyramidal features in various combinations. CASE DISCUSSION: A 61-year-old woman was admitted to the Department of Neurology, General hospital „Prim.dr. Abdullah Nakš“ in Sarajevo in September 2019 due to speech impairment, unsteady gait, progressive weakness of both extremities and urinary incontinence. Her family noticed irritability and depression. Symptoms lasted for 2-3 years and the deterioration occurred in the last year. Levodopa and ropinirole were not effective because of an operation due to urinary incontinence. Orthostatic hypotension and hypothroidism were previously diagnosed. In neurological examination mildly dysarthric and reduced speech were noted. Brain MRI and axial stiffness were present as well as a moderate increase of TNF-alpha. Based on this association, TNF-alpha was suspected as a biomarker for depression and anxiety. RESULTS: The regression showed that TNF-alpha was not significantly associated for both RCADS depression scores or RCADS anxiety scores. CONCLUSION: Our study revealed that there is no significant difference between increased levels of TNF-alpha and higher levels of both depression and anxiety traits in adolescents. This association is largely influenced by negative affect scores. This demonstrates the complexity of mood disorders within adolescents and further studies are warranted to determine if inflammation plays a role.

Key words: pediatric obesity, mood disorders, inflammation

18. THE RELATIONSHIP BETWEEN INSOMNIA SEVERITY AT THE START OF THE SEMESTER AND DURING THE EXAM PERIOD IN MEDICAL STUDENTS FROM THE FIRST TO LAST YEAR

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BACKGROUND: Insomnia is a sleep disorder in which you have trouble falling and/or staying asleep. Students can often suffer from insomnia due to their lifestyle, exams, daily stress, and worries. AIM: The aim of this study was to determine the existence and/or worsening of insomnia in medical students comparing the two weeks at the beginning of the year and two weeks into the exam period. The secondary goal was to determine if stress combined with sleep disturbances plays a role in the day-to-day life of a medical student. METHODS: The study was designed as a cross-sectional study that included 418 respondents, aged 19 to 36 from the 1st to the 6th year of the Faculty of Medicine, University of Sarajevo, conducted through a Google Forms survey, with 16 questions. Insomnia questions were done following the official “Insomnia Severity Index” (ISI) questionnaire which offers an objective score for the severity of this condition. RESULTS: Paired Samples t Test was used to test statistical difference between two time points. ISI score worsened from pre-exam (M=1.72, SD=0.84) to during the exam period setting (M=2.53, SD=1.02). This change was statistically significant t(419) = -18.093, p=0.001. The relationship between variables was assessed using Pearson correlation analysis. Test showed low but significant positive association between worsening of ISI score during the exam period and students of female gender (r=0.223, p=0.0001). There was low negative correlation between worsening of ISI score and following variables: student’s age (r=-0.107, p=0.029), frequency of nicotine consumption (r=-0.183, p=0.0001) and ISI score pre-exam (r=-0.162, p=0.001). CONCLUSION: With all...
of this data, we conclude that, stress suffered during medical exams, combined with the intake of CNS stimulating substances, has a positive effect when it comes to the worsening of sleep and life quality in medical students.

Keywords: insomnia, insomnia severity index, CNS stimulation

19. ASSESSING IMPACT OF COVID-19 ON THE CRONICALLY ILL PATIENTS: SARAJEVO CANTON EXPERIENCE
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BACKGROUND: Since the first confirmed case was reported on 5 March 2020, there has been over 113,000 cases and 4200 deaths. Bosnia and Herzegovina have been fairly affected by the COVID-19 epidemic. Thus, it is important to determine patients’ perception and experience towards their access to healthcare facility during COVID-19. Due to restrictions on movement and physical interaction among the population, online survey has been an effective tool for this purpose. AIM: Our objective is to assess and compare changes in the access number of chronically ill patients who require continuous treatment and checkups in public and private health institute from 2019 and 2020. METHODS: Between December 2020 and January 2021, an online survey was distributed via public and social posts on patients’ perception and experience in Sarajevo canton health facilities. The convenience online survey method of nonprobability sampling was used, the mean responses were calculated as overall percentage score. Further data about hospital visits within 2019 and 2020 have been attained from several public and private medical institutes in Sarajevo. RESULTS: The response rate was 27.6% (52/188). Baseline survey characteristics showed that 72% of participants had concerns visiting health care units and 43% postponed their visits due to exposure of COVID-19 and from low protective measures of their surroundings. Furthermore, we identified a significant raise in visits to private clinics, near no change in hospital visits whereas outpatient clinics had reduced number of patient visits. CONCLUSION: Despite the uncertainty and concerns in visiting hospitals, participants have still met their health needs. Moreover, they were tentative about the health facility not taking the necessary steps to ensure a safe and healthy work environment during COVID-19. Online population surveys could be used as a fast and cheap approach to improve healthcare system toward hospital staff and patients’ satisfaction, safety, cooperation, and treatment.

Keywords: COVID-19, survey, healthcare, chronic patients

20. PSYCHOLOGICAL DISTRESS IN PEOPLE WITH MULTIPLE SCLEROSIS DURING COVID-19 PANDEMIC
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BACKGROUND: COVID-19 pandemic affects people’s mental health by increasing the rate of psychological distress including depression, anxiety and sleeping problems. Individuals with multiple sclerosis (MS) already have maladaptive coping strategies which make them more sensitive to the psychological effects of the outbreak. AIM: The aim is to evaluate psychological distress caused by COVID-19 outbreak in MS patients. METHODS: Search algorithm was obtained by combining terms “multiple sclerosis”, “COVID-19”, “depression” and “anxiety”. We searched PubMed and found 14 applicable articles published from April 2020 to January 2021. RESULTS: Studies show that MS patients are more prone to become depressed and anxious during COVID-19 pandemic which is followed by the increased use of antidepressants. Females and the younger population are at higher risk of developing psychological distress. MS patients with somatic and psychiatric comorbidities are more susceptible for serious psychological consequences. Also, patients with MS are reporting poorer sleep quality. The quality of life before and during the lockdown is reduced in terms of health changes and emotional problems causing limitations. On the contrary, some patients with relapsing-remitting MS experience better quality of life considering social functioning and sexual satisfaction, especially females. But, people with progressive MS report little or no change in mental health since they are used to take extra careful preventive measures that are possibly reducing psychological distress. Also, due to considerable physical disability there are no extreme and forceful changes in everyday lives in MS patients with progressive disease. They were already socially isolated before the pandemic and have already lived with increased uncertainty due to the unpredictable nature of their condition. CONCLUSION: MS patients, especially females, younger people, and those with additional comorbidities are at higher risk of developing psychological distress, while patients with progressive type of disease are less prone to supplemental psychological distress caused by COVID-19 pandemic.

Keywords: multiple sclerosis, COVID-19, psychological distress, depression, anxiety

21. THE PREVALENCE OF NEUROTIC LEVEL’S DISORDERS DURING THE COVID-19 PANDEMIC
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BACKGROUND: In the context of the global expansion of the COVID-19, all the experienced negative emotions result in a stress, i.e., a physiological adaptation process, which arises as a response to assumed and real threats. New evidence from psychiatrists evidence that we are currently on the verge of a pandemic of mental disorders. AIM: To assess the prevalence of anxiety and depressive disorders in patients with COVID-19 and in people who have not had COVID-19. METHODS: the analysis of anonymous questionnaires (n = 200) using the HADS scale from June until November, 2020. RESULTS: the patients were divided into 2 groups. The first group (n = 100) included patients who underwent COVID-19. The prevalence of increased levels of anxiety and depression (A&D) in the study group was 72%. The prevalence of increased levels of anxiety and depression (A&D) in the comparison group was 62%. The pre-pandemic results in our region for depression and anxiety before the pandemic were 30.2% and 31.5%, respectively. In our study, the prevalence of these conditions (average of two groups by results of HADS scale) is 1.8 and 1.5 times higher than before the pandemic. CONCLUSION: The prevalence of anxiety-depressive disorders in patients who underwent a COVID-19 is 2 times higher than in patients before the pandemic. Also, patients who underwent COVID-19 of are significantly more likely to suffer from symptoms of clinical anxiety and depressive disorders.

Keywords: depression, anxiety, HADS, COVID-19

22. AN EVALUATION OF SURGICAL TECHNIQUES FOR THE TREATMENT OF DECUBITAL ULCERS
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BACKGROUND: The medical management of decubitus ulcers became an important issue in recent years because they still represent a serious surgical problem with frequent complications and recurrence. Choosing the appropriate surgical technique is essential for proper healing, which could be postponed due to the patient’s coexisting pathology. Myocutaneous and fasciocutaneous flaps are the most commonly used reconstructive techniques. AIM: This study aims to evaluate the advantages of myocutaneous flaps for the treatment of patients who developed stages III and IV decubital ulcers compared to fasciocutaneous flaps and free skin grafts. METHODS: In a retrospective clinical study we analyzed 40 patients with decubital ulcers who were surgically treated at the Clinic for Plastic and Reconstructive Surgery in the period from January 1st 2014 to December 31st 2018. RESULTS: Decubital ulcer was more common in men with 55% of cases. When it comes to age, 40% of cases were in the age group of 40 to 60 years. In 57.5% of cases, neurological disorders were the most common cause of plegia or paresis. The most common location of the decubital ulcers was the sacral region in 41% of cases. Musculocutaneous flaps were used in 57% of cases for the reconstruction of decubital wounds. 32.5% of patients had early complications, while late complications occurred in 17.5 cases. CONCLUSION: Stages III and IV of deep decubital ulcers require surgical treatment. The best results in the reconstruction of decubital wounds can be achieved with the use of musculocutaneous flaps. This surgical technique reduces a big number of complications.

Keywords: decubital ulcer, surgical treatment, musculocutaneous flap

DOI 10.5195/ijms/2021.978  |  ijms.info
23. COMPARISON OF LAPAROSCOPIC SENTINEL LYMPH NODE IDENTIFICATION AND OPEN PELVIC LYMPHADENECTOMY IN LOW-RISK UTERINE CANCER

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BACKGROUND: uterine cancer is one of the most common cancers in the world. In order for women to experience as few complications as possible, alternative surgical treatments have been sought. AIM: to compare treatment outcomes in laparoscopic hysterectomy with sentinel lymph node (SLN) and open hysterectomy with systematic pelvic lymphadenectomy in patients with low-risk uterine cancer. METHODS: data of women with low-risk uterine cancer treated in National Cancer Institute from 2019 was retrospectively analyzed. Data differences were considered statistically significant with p < 0.05. RESULTS: 76 patients were divided into two groups: patients who underwent laparoscopic hysterectomy with SLN removal (N = 29) and patients who had hysterectomy with systematic pelvic lymphadenectomy (N = 47). SLN was found in 29 of 29 patients (100%). 86.2% patients had SLN on both sides and 13.8% patients had SLN detected only on one side. In the second group, the average of lymph nodes removed was 11.1 ± 5.9. LNMs were not found in either group. The average duration of surgery in the first group was 160.5 ± 42.52 minutes, in the second group was 104 ± 46.3 minutes (p = 0.0009). No complications were found in the SLN group while 12.8% patients in the second group experienced complications (p < 0.05) and were evaluated according to the Clavien-Dindo classification and corresponded to: 2a, 2a, 2a and 2b. The average number of bed days in the first group was 6 ± 3.06 days, in the second group 8.9 ± 3.4 days (p = 0.0016). CONCLUSION: endoscopic surgery is the first-line method for the treatment of early-stage uterine body cancer. Identification of the sentinel lymph node is an alternative way of surgical staging of low-risk uterine cancer. Considering the frequency of complications and hospitalization time, a minimally invasive technique is superior to an open surgery.

Keywords: sentinel lymph node, uterine cancer

24. APPLICATIONS OF ARTIFICIAL INTELLIGENCE TO DERMATOLOGY

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BACKGROUND: Artificial intelligence (AI) has contributed to dramatic progress in medicine via convergence of the availability of large data sets and graphics-specific computer hardware. Global healthcare augmented reality market is anticipated to quadruple from 2020 to 2025. Dermatologists are expected to encounter such technologies to a greater extent due to the visual focus of the field, which is associated with opportunities and challenges. AIM: Aim of this research is to inspire future medical professionals to understand the basic features of AI for effective utilization in clinical practice, collaborating with experts in AI research, and playing an active role in policy making to ensure patient safety. METHODS: Research databases of PubMed, Central and Google Scholar are searched with the keywords AI, deep learning, virtual reality, augmented reality, dermatology. Results are grouped in application fields of AI in dermatology, current challenges and points for potential growth, educational and medical context, as well as interpreted and illustrated accordingly. RESULTS: Deep learning tools produce higher diagnostic consistency and accuracy, and provide an opportunity for earlier diagnosis, treatment, and improved access to dermatologic care. Most prevailing applications analyze and classify images differentiating between benign and malignant skin lesions and measuring precise wound boundaries. Applications analyze and classify images differentiating between benign and malignant skin lesions and measuring precise wound boundaries. Artificial intelligence, augmented reality, virtual reality, innovation, dermatology.

Keywords: artificial intelligence, augmented reality, virtual reality, innovation, dermatology.

25. SIGNIFICANCE OF DIAGNOSTIC MODALITY PET/CT IN PATIENTS WITH DIFFERENTIATED THYROID CARCINOMA

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BACKGROUND: Positron emission tomography/computed tomography (PET/CT) is a valuable imaging technique which is an important tool in oncology. While PET reveals the metabolic abnormalities, CT is used to locate the anatomical abnormalities, so combined functional and anatomical imaging techniques can improve the ability to detect thyroid recurrence/metastases. AIM: The aim is to evaluate significance of diagnostic modality PET/CT in patients with differentiated thyroid carcinoma (DTC). METHODS: We are reviewing available literature and published studies (database PubMed). We used methods of analysis of 7 pivotal studies. RESULTS: Studies are showing that PET/CT is significant for early detection and monitoring and follow up of patients with DTC. PET/CT has the ability to identify cases of recurrence / metastasis of the DTC after thyroidectomy and can provide additional information (TC) and negative iodine (WBS). PET/CT is also a good tool for poorly differentiated thyroid cancer, because the level of FDG uptake shows the process of dedifferentiation. Therefore, this method can serve as an early predictor for therapeutic management. Not only that, it can change the patient’s current aspect of the treatment. For example, radioiodine (RAI) treatment is usually given after thyroidectomy, however if these cells are poorly differentiated iodine cannot enter it and kill the cancer cell. Based on this, we can use PET/CT as one of the decision tools to make treatment decisions. Otherwise, the exclusion of this treatment was based on clinical manifestations which in this case may mean disease progression. CONCLUSION: PET/CT can be considered in the case of radioiodine - negative DTC patient with elevated and rising TC.

Keywords: PET/CT, differentiated thyroid carcinoma, metastasis, treatment

26. PATIENT WITH MULTIPLE NEUROENDOCRINE TUMORS WITH POSSIBLE MULTIPLE ENDOCRINE NEOPLASIA TYPE 1 SYNDROME - CASE REPORT

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INTRODUCTION: Neuroendocrine tumors (NETs) are neoplasms of neuroendocrine system mostly located in gastroenteropancreatic tract. All NETs can be classified in two main groups: functioning or non-functioning NETs. Multiple endocrine neoplasia type 1 (MEN1) syndrome is characterized by a triad: parathyroid and pituitary adenomas with NETs. Incidence of MEN-1 syndrome is 0.25% and the prevalence is 2/100 000 capita.

CASE DESCRIPTION: We present the case of 33 year-old female patient with DM type 1, sideropenic anemia, Hashimoto thyroiditis, pituitary microadenoma and C677T mutation of MTHFR gene. In 2018, esophagogastroduodenoscopy procedure showed a gastric polyoid formation that turned out to be a NET (Grade 1; Ki-67<20%; synaptophysin positive). Two years later, a new polyp was found, that once again was a NET (Grade 1; Ki-67<20%; l-chromogranin A (C-hA) and synaptophysin positive). Whole body PET/CT Ga-DOTA-TATE scan showed malignant soft tissue lesion located in fatty planes adjacent to stomach that was a metastasis of NET in omental lymph node. Because of orbital hypoechoic area found on thyroid ultrasound, fine needle aspiration (FNA) was indicated and it couldn’t confirm either follicular hyperplasia of parathyroid gland or a metastasis of NET (C-hA negative, C-686+ positive). Serum chromogranin levels were always higher than normal. After third recidive, it is concluded that therapy with octreotide is needed. In few months, after second parathyroid biopsy, it’ll be known if it’s MEN 1 syndrome or metastasized neuroendocrine tumor. DISCUSSION: In regards of producing active substances NETs substance or not, NETs elicited symptoms of carcinoid syndrome that our patient didn’t show. Constant high levels of chromogranin would correlate with tumor burden and bad prognosis. CONCLUSION: The diagnostic and therapeutic approach has to be multidisciplinary with laboratory, imaging and endoscopic procedures to
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The interest of medical students in surgical career is constantly declining. In the face of growing demand for surgical procedures it is essential to find the reasons responsible for that aim. AIM: The aim of the study was to identify the level of interest in surgery career among medical students and to identify factors influencing their decisions.

METHODS: The anonymous questionnaire distributed electronically among students from 16 medical universities. Comparison between surgical and non-surgical groups was established using Mann-Whitney U and Chi-square tests.

RESULTS: We surveyed 595 individuals (190 male and 405 female). 48% of students declared interest in surgical subspecialty as a career whereas 63% considered it before medical school. Surgery was chosen more frequently by male individuals at the beginning of studies (2nd year: 63% vs 33%, p=0.002; 3rd year: 62% vs 38%, p=0.005). Students interested in surgery tend to assess their predispositions as very good (21% vs 5%, p=0.001). Additionally, they were more likely to perform practical activities and be involved in research work (54% vs 44%, p=0.026). Significantly more students choosing surgery reported positive experience with surgical environment (83% vs 52%, p=0.001). Whilst most of students considered surgery at least interesting (59%), surgical education was described as insufficient (49%). Students who considered it poor were more likely to choose non-surgical specialty (1% vs 16%, p=0.001). The most appreciated features of surgery were: rapid effects of treatment (85%), job satisfaction (83%) and using manual skills (67%), while the most discouraging were: insufficient (49%) and uninteresting (42%). Students who considered it uninteresting were more likely to resign from such career path.

Keywords: surgery, surgical education, risk factors, career choice, medical students

The role of cytogenetic methods in the diagnosis of hematological diseases

Keywords: cytogenetics, chromosomal aberrations, diagnostics, hematological diseases

Case report: balanced translocations 46,XY, t(8;17)(p23;q11) in brothers with azoospermia

Keywords: balanced translocation, azoospermia, karyotype
31. MAXILLARY SINUS LIFT - TECHNIQUES, INDICATIONS AND CONTRAINDICATIONS
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BACKGROUND: Sinus lift is a procedure which, by subcranial augmentation, by inserting a bone graft between the floor of the sinus and the sinus mucosa, provides the necessary amount of foundation for the installation of endosseous implants. AIM: This paper presents indications and contraindications, various sinus lift techniques, advantages and disadvantages of these techniques, and the complications that can occur due to this procedure through a systematic review of the literature. METHODS: Analysis of the available literature and articles, articles published within the databases of Google Scholar and PubMed, and on the topic of sinus lift, were included. RESULTS: Literature search on the PubMed database showed that the sinus lift shows that this technique is a relatively simple procedure with good results. The degree of resorption of the alveolar bone directly affects the planning of the surgical technique of sinus augmentation and the approach, up to 90% during infancy, are usually misdiagnosed. This concordant and autogenous bone, allogeneic bone substitutes and a combination of these materials are used for sinuses grafting. CONCLUSION: The sinus lift technique is widespread among clinicians, is very often practiced, and shows very good results, provided that the basic principles of the technique are strictly adhered to. The risks involved are minimal, with possible postoperative complications which can be treated with medication and/or surgery.

Keywords: maxillary sinus, maxillary sinus augmentation, direct lateral window, sinus lift technique, dental implants

32. HEREDITARY HEMORRHAGIC TELANGIECTASIA (RENDU-OSLER-WEBER SYNDROME) RELATED TO IRON DEFICIENCY ANEMIA
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INTRODUCTION: Hereditary hemorrhagic telangiectasia (HHT) or Rendu-Osler-Weber syndrome is a rare genetic disorder with autosomal dominance, characterized by the typical pathological and clinical findings of telangiectasias and arteriovenous malformations. Epistaxis is often the first, or the only, clinical manifestation. The incidence of HHT is unknown, but it is considered to be widespread among clinicians, is very often practiced, and shows very good results, provided that the basic principles of the technique are strictly adhered to. The risks involved are minimal, with possible postoperative complications which can be treated with medication and/or surgery.

CASE DESCRIPTION: A 36-year-old male patient previously diagnosed with ulcerative colitis presented with chest discomfort, without "strain" signs for ischemia and showed the suspected thrombi. Coronarography showed normal epicardial artery. CT showed three masses up to 2 cm in diameter. MRI confirmed mild apex hypokinesia but presented the suspected thrombi. Patients with IV IG had the highest rate of progressive anemia (p<0.01) thus requiring SAE. 7 (35%) of all patients received erythrocyte mass transfusion. Patients with IV IG had the highest rate of progressive anemia (p<0.01) thus requiring SAE. 7 (35%) of all patients received erythrocyte mass transfusion. Highest thrombocytosis level and increased post-treatment inflammatory activity was found on 7th day after SAE in III IG. One patient developed splenomegaly followed by splenectomy; no other cases of significant complications requiring laparotomy after SAE were found. CONCLUSION: The most common reason of TSL in Latvia is polytraumatic event. SAE can be used in both low-grade and high-grade TSL with minimal rate of complications. Further studies are necessary to compare postoperative results of SAE versus open surgery in patients with equal TSL grades.

Keywords: trauma, splenic artery, embolization

34. A CASE REPORT OF GIANT LEFT VENTRICULAR THROMBUS IN PATIENT WITH ULCERATIVE COLITIS
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INTRODUCTION: Giant intracardiac thrombosis is a rare condition usually connected with hypercoagulable state. Its incidence is very low in young population with normal systolic function. Ulcerative colitis is a form of inflammatory bowel disease (IBD) which targets predominantly the gastrointestinal tract. Cardiovascular manifestations are mostly considered immune-related. Among others, patients have increased risk of endomyocardial fibrosis (EMF) which is a form of restrictive cardiomyopathy of unknown etiology. CASE DESCRIPTION: A 36-year-old male patient previously diagnosed with ulcerative colitis presented with chest discomfort and fever. Cardiac enzymes were elevated and electrocardiography showed negative T-wave in precordial leads V3-6. Echocardiography revealed normal systolic function of the left ventricle with gentle hypokinesia of septal part, without "strain" signs for ischemia and showed the suspected thrombi. Coronarography showed normal epicardial artery. CT showed three masses up to 2 cm in diameter, MRI confirmed mild apex hypokinesia but presented a single 22x8 mm triangular thrombus. Therefore, MRI proved to be more precise. Fibrotic changes in the apex endocardium suggested possible endomyocardial fibrosis. Patient was identified as MTHFR heterozygous for C677T and homozygous A1298C variant indicating higher risk for blood clots. He was treated with β-blockers, antibiotics and initially with Heparin and then with Warfarin. During the hospitalization patient developed an embolus in popliteal artery, treated with embolectomy. DISCUSSION: Cases of intracardial thrombosis in young population are rarely described in literature. They are often associated with pre-existing hypercoagulable state or cardiac disease. In this case endomyocardial fibrosis damaged heart wall making it susceptible to thrombus formation. Furthermore, MTHFR mutations result in higher risk for clotting as well. CONCLUSION: In rare cases with multiple risk factors combined, such as endomyocardial fibrosis and inherited MTHFR mutations, giant ventricular thrombus may be formed.
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35. DIFFERENCES BETWEEN NON-OPERATIVE AND OPERATIVE TREATMENT OF PROXIMAL HUMERAL FRACTURES IN ELDERLY PATIENTS

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BACKGROUND: Proximal humeral fractures (PHF) are fractures of the proximal third of the humerus. These fractures commonly occur in older age adults, mostly over age of 60. Treatment options for PHF are conservative and surgical. While conservative approach is approved for non-displaced PHF, approach for comminutive and displaced fractures is still to be determined.

AIM: The aim of this study is to provide information about comparison of conservative and operative treatment. METHODS: This study is based on literature review of studies comparing operative and non-operative treatment, performed in January 2021, with a focus on effectiveness of both approaches in elderly patients. RESULTS: The review analyzed 10 randomized clinical trials (RCTs) and one meta-analysis which involved 1208 patients with mean age of 69.9 years. Majority of patients were women (f: 948, m: 260). 503 patients were treated surgically while 555 received conservative treatment. There is no statistically significant difference between groups. Studies from 1997, 2001 and 2009 showed no statistical difference in functional ability between conservative and non-operative group. A study from 2019 showed no statistical difference between 2 groups consisting of 44 patients each treated conservatively and operatively.

CONCLUSION: Studies so far show that non-operative treatment for PHF can be as effective as operative treatment. Considering complications connected with operative treatment and emotional stress we should start to consider non-operative treatment as primary treatment. Studies with bigger test groups are needed to determine if there are any statistical differences between the two approaches. If the non-operative treatment should be proven more beneficial the new protocol for assessing and treating PHF in elderly patients should be constructed.

Keywords: proximal humeral fracture, conservative treatment, surgery

36. TREATMENT OF A PATIENT WITH LATE PRESENTING SEVERE BILATERAL CLEFT LIP AND PALATE

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INTRODUCTION: Of all congenital anomalies of the oral cavity, one of the most severe from an aesthetic, functional and sociological point of view is the cleft lip and soft palate. This phenomenon occurs due to disorders of embryonic development during the first three months of intrauterine life.

CASE DESCRIPTION: Male patient, 9 years old, from a very remote mountain area of East Turkey, presented with a severe bilateral cleft lip and palate. Neglected due to socioeconomic and geographical reasons. Non-syndromic, otherwise healthy, speech is disordered; low intelligibility, eating and drinking well. During the examination wide cleft lip and palate, severely premaxillary depression and dento maxillofacial development is in normal range compared to his peers. Laboratory and radiology otherwise nonspecific. Two stage surgical closure, first stage lip closure along with projected premaxillary setback and the second stage total palate closure along with radical veloplasty. Full recovery without any complications. Patient went back home 3 months later, doing better socially and speech is much more understandable.

CONCLUSION: Services and treatment can vary depending on the severity of the cleft; the child's age and needs; and the presence of associated syndromes or other birth defects, or both. The surgical approach to each child is individual, but the main goal is to achieve anatomical muscle reconstruction, also to ensure normal breathing, swallowing and speech, as well as to prevent hearing damage.

Keywords: cleft, defect, lip, palate, veloplasty

37. LIVER TRANSPLANTATION AFTER COMPlicated CHRONIC HepATitis B, FOLLOWED BY COVID-19

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INTRODUCTION: We present a case of a 75-year old male with chronic, HBsAg negative hepatitis B who developed complications of chronic liver disease, despite the long-term antiviral therapy and undetectable HBV DNA, and underwent orthotopic liver transplantation (OLT). Afterwards, patient got mild COVID-19 and recovered. CASE DESCRIPTION: The patient was diagnosed with chronic hepatitis B in 2005, presenting with compensated liver cirrhosis (Child Pugh score 6). The antiviral treatment with lamivudine was started and switched to tenofovir disoproxil fumarate in 2013 achieving complete HBV DNA suppression ever since. In 2019 he presented with symptoms of a first stage encephalopathy, was hospitalized and underwent diagnostic workup. MSCT of the abdomen showed a solitary hypervascular area (3 cm) which was later diagnosed as hepatocellular carcinoma meeting Milan criteria for liver transplantation. He underwent 2 cycles of transarterial and transjugular chemotherapies, and subsequently OLT. DISCUSSION: This is a rare case of a patient in a good physical condition despite consecutive severe diseases and antiviral procedures. Liver transplanted patient with chronic hepatitis complications; liver failure and hepatocellular carcinoma. It is also one of the rare reported cases of COVID-19 in liver transplant patients. Although this patient has fully recovered, reported mortality rate of transplanted immunosuppressed patients with COVID-19 is up to 30%.

CONCLUSION: Chronic hepatitis B is a progressive disease with oncogenic potential. One fourth of those with chronic hepatitis B develop cirrhosis, liver failure or cancer, which demand liver transplantation. Those who undergo transplantation, need constant monitoring and therapy for HBV as well as immunosuppressive and prophylactic therapy. Because of immunosuppressive therapy, patients are often more susceptible to infectious diseases, such as COVID-19 and therefore special precaution is needed.

Keywords: COVID-19, hepatitis B, liver transplantation

38. A RARE CASE OF COLLET-SICARD SYNDROME SECONDARY TO BOERHAAVE’S SYNDROME

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INTRODUCTION: We report a case of a patient presenting with Boerhaave’s syndrome who developed a rare neurological complication, Collet-Sicard syndrome. CASE DESCRIPTION: A 30-year-old male presented with a two-day history of acute onset, severe abdominal pain, and vomiting. On admission, he was pyrexic and tachycardic. A CT of the chest, abdomen, and pelvis showed air in the mediastinum and upper abdomen as well as considerable mediastinitis extending into the neck. CT with gastrografin showed extravasation of contrast into the mediastinum, indicating an oesophageal perforation. The patient was diagnosed with Boerhaave’s syndrome and admitted to the ITU. The patient then underwent a diagnostic laparoscopy with washout and drain placement, followed by an OGD with insertion of a fully covered oesophageal stent. The stent was removed after two weeks but the patient had residual dysphagia related to neuromuscular palatal dysfunction. DISCUSSION: This is a rare case of a patient with chronic hepatitis B, liver failure and hepatocellular carcinoma. It is also one of the rare reported cases of COVID-19 in liver transplant patients. Although this patient has fully recovered, reported mortality rate of transplanted immunosuppressed patients with COVID-19 is up to 30%.

CONCLUSION: Chronic hepatitis B is a progressive disease with oncogenic potential. One fourth of those with chronic hepatitis B develop cirrhosis, liver failure or cancer, which demand liver transplantation. Those who undergo transplantation, need constant monitoring and therapy for HBV as well as immunosuppressive and prophylactic therapy. Because of immunosuppressive therapy, patients are often more susceptible to infectious diseases, such as COVID-19 and therefore special precaution is needed.

Keywords: Boerhaave’s syndrome, Collet-Sicard syndrome, cranial nerve dysfunction, oesophageal perforation
41. PRESENTATION OF A YOUNG PATIENT WITH EAR FULLNESS AND TINNITUS DUE TO A RARE TUMOR

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INTRODUCTION: We present a case of a young female patient (19 years old), who experienced ear fullness and tinnitus regarding her right ear which were present for one year. CASE DESCRIPTION: The patient reported unilateral ear fullness and tinnitus in the last year. She had no other medical or family history. The pure tone audiometry showed normal hearing on the left while on the right ear hearing was normal in lower frequencies and sensorineural hearing loss was present at 4kHz of 90 dB. Tympanometry showed no abnormalities. Otoscopy discovered red discoloration under the eardrum. MR imaging of the head was done earlier and showed no abnormalities. Due to the clinical image and because the symptoms did not abate, another MR image was performed, but this time MRI of the temporal bone with contrast. A formation dimensions 8x5 mm in middle ear was discovered. Surgical procedure was indicated. It included exploration and extirpation of the tumor. DISCUSSION: Middle ear adenoma is a rare benign tumor that develops from the epithelial mucosa. It can occur at any age with no age predilection. Furthermore, it has no specific signs or symptoms, making the diagnosis difficult. It is necessary to perform PHD and immunohistochemical tests for the confirmation of the diagnosis, after the suspicion of the disease was set based on the clinical findings, audiology and imaging (CT, MR). The differential diagnosis to cholesteatoma and other tumors (schwannoma, meningioma) is important due to the mode of treatment. CONCLUSION: Adenomas of the middle ear are rare. Since the clinical presentation is not specific, the diagnosis is challenging and even microscopic examination and immunohistochemistry sometimes do not give the clear diagnosis. Surgical exploration and extirpation is the treatment choice and regular follow-up including clinical examination and MR imaging are recommended.

Keywords: impaired hearing, tinnitus, adenoma

42. NEUROLOGIC SIGNS AND SYMPTOMS IN PATIENTS POSITIVE FOR COVID-19

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BACKGROUND: Infectious disease, caused by the most recent strain of coronavirus, SARS-CoV-2, first appeared on 31st of December, 2019., in Wuhan, China. By March 2020 it had spread over the globe. Various symptoms have been associated with it, including neurologic. AIM: To examine frequency of neurologic symptoms during the COVID-19 infection; and to create statistics for B&H. METHODS: By using online questionnaire we have collected data necessary for the statistics. Prior to answering questions, examinees had been well-informed about the project and had been given the chance to ask questions. Informed consent has been obtained. Research has excluded juveniles. Project has been approved by Bioethical commitee of SSST. RESULTS: Research has included 155 examinees; 128 women (82.6%) and 27 men (17.4%). Majority of the examinees (36.8%) were of age range 31-44. The most common first symptoms were: fever (59.4%), body aches (51.6%), headache (49%), generalized weakness (48.4%), cough (26.5%), loss of taste (ageusia, 11.6%), loss of smell (anosmia, 22.6%) or loss of both (59.4%). For the majority of respondents (72.3%), the symptoms of COVID-19 had persisted for 1-5 days before the infection has been confirmed by the PCR test, and in 3.2% of respondents the symptoms had persisted for more than 15 days. During the infection, other neurologic symptoms appeared. Disorders of concentration accounted for about 5–8%. The most common general symptoms were: dizziness (52.4%), confusion in 52.9%, coordination in 34.1%. CONCLUSION: This statistic has confirmed increased frequency of neurologic symptoms in patients positive for COVID-19 in our population. Some other studies have shown the same and suggest that SARS-CoV-2 can reach the central nervous system and peripheral nervous system most likely from the bloodstream or olfactory pathway. For the particular mechanism and more detailed data, further research is required.

Keywords: COVID-19, neurologic signs and symptoms, SARS-CoV-2

INTRODUCTION: as the coronavirus pandemic continues to ravage worldwide, new forms of symptoms that were never reported previously. Persistent hiccups were also reported as an unusual COVID-19 symptom as a first case published in American Journal of Emergency Medicine. Hiccups are involuntary spastic contractions of the diaphragm and intercostal muscles followed by the rapid closing of the glottis and, generally, a self-limited disorder. CASE DESCRIPTION: A 68-year-old male with a past medical history of obesity, hypertension and stroke had COVID-19 infection. He was febrile to 38.6 °C and mildly tachycardic with a heart rate of 110 beats per minute. He was placed on contact and airborne isolation and started on 500 mg paracetamol and 10 mg dexamethasone twice daily. Symptomatic care was continued and the patient was emotionally altered and anxious due to the disease. Two days after starting therapy he started to have persistent hiccups. DISCUSSION: In this case, the question of the cause of hiccups arises. Is it an atypical symptom of COVID-19 infection, a side effect of dexamethasone, or is it a psychosomatic symptom due to the patient’s strong anxiety and fear related to the infectious disease. The patient did not respond to conventional clomipramine therapy. However, combined therapy is associated with enhanced mucosal toxicity; loss of 8 to 10 percent of body weight is common, even with early nutritional support. Immunonutrition refers to enteral formulas that are supplemented with L-arginine, RNA nucleotides, and omega-3 fatty acids. Regardless of what caused the hiccups, the antipsychotic sulpiride proved to be the drug of choice. It is a low-potent atypical antipsychotic which acts as a neurovegetative stabilizer when applied in low doses in the range of 50-200 mg. CONCLUSION: Psychosomatic disorder should be considered in the underlying cause of intractable hiccups. Antipsychotic therapy can be considered for patients with intractable hiccups refractory to conventional therapy.

Keywords: antipsychotics, corticosteroids, COVID-19 infection, hiccups

40. PALLIATIVE AND SUPPORTIVE THERAPY FOR PATIENT WITH CANCER OF UNKNOWN PRIMARY - CASE REPORT

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INTRODUCTION: Cancer of unknown primary (CUP) is a clinic-pathological syndrome characterized by a histologically proven metastatic cancer without a clinically found primary site of origin. In 2017., 604 newly diagnosed patients with CUP accounted for 2.4% of all newly diagnosed cancer patients in Croatia. Of these, patients with squamous cell carcinoma accounted for about 5-8%. CASE DESCRIPTION: A 53-year-old male presented with a large cervical mass (10x15 cm) on the left side of the neck. After the examination by ENT specialist, MSCT imaging revealed an extensive conglomerate of cervical lymph node masses, infiltrating the surrounding tissue and with foci of necrosis. A cytological needle aspiration was performed and a metastatic squamous cell carcinoma was identified. Even after a detailed clinical and radiological investigation, a primary origin of cancer could not be identified. The patient was in a good overall clinical condition but had lost 20 kg in the past 3 months due to the inability to eat solid food as a result of the tumor expansion. For this reason, nasogastric tube was inserted and nutritional support was introduced. Palliative radiotherapy (RT) with 39Gy divided in 13 fractions was performed. DISCUSSION: RT was used as a palliative therapy for this patient. Other palliative treatment modalities include surgery and/or chemotherapy. Multimodal approach represents the best treatment modality for patients with CUP. However, combined therapy is associated with enhanced mucosal toxicity; loss of 8 to 10 percent of body weight is common, even with early nutritional support. Immunonutrition refers to enteral formulas that are supplemented with L-arginine, RNA nucleotides, and omega-3 fatty acids. RT combined with immunonutrition seems like a promising approach for CUP patients. CONCLUSION: RT combined with immunonutrition was beneficial for this patient. However, decisions still need to be undertaken on a case-by-case basis.

Keywords: cancer of unknown primary, head and neck tumor, immunonutrition, radiotherapy
PULMONARY THROMBOSIS/EMBOLISM IN A PATIENT WITH COVID-19

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INTRODUCTION: Several reports have described significant procoagulant events, including pulmonary embolism (PE) in patients with coronavirus disease-2019 (COVID-19). Case Description: A 61-year-old female, RT PCR positive for SARS-CoV-2 was admitted to the University Hospital for Infectious Diseases „Dr. Fran Mihaljević” for fever and nonproductive cough lasting for 14 days. In the last 2-3 days she complained of shortness of breath and vomiting. Her medical history was unremarkable. On admission, the clinical examination showed altered general health status, dyspnea, tachypnea and low on O2 saturation in hemoglobin (SaO2) of 86%. The pathohistological findings of the laboratory tests consisted of slight C-reactive protein (49.3 mg/L) elevation and increased plasma level of D-dimer (14.45 mg/L). Chest radiograph revealed bilateral interstitial infiltrates. Multi-slice computer tomography (MSCT) pulmonary angiography revealed multiple larger postcontrast filling defects in the distal portion of the right main pulmonary artery, right interlobar artery, right upper lobe and middle lobe segmental branches. Smaller filling defects were seen in the left main pulmonary artery as well as upper and lower lobe segmental branches. Postcontrast filling defects are probably consistent with large vessel pulmonary embolism and distal pulmonary microvascular occlusion. In the pulmonary “parenchymal” window, subpleural “ground glass” and “crazy paving” opacities are seen in all pulmonary segments, bilaterally. Parenchymal consolidations are present bilaterally in the posterior segments of lower lobes. Discussion: We found out in our study that patient with COVID-19, without risk for developing PE, are more susceptible to get PE during the second and third week of the disease. Clinical deterioration with elevated value of CRP and D-dimer suggests possible PE and requires urgent MSCT pulmonary angiography to confirm or exclude PE. Conclusion: Our study suggests that COVID-19 patient, without risk factors, can develop acute PE during the second and third week of the disease due to procoagulant effect of SARS-CoV-2.

Keywords: Covid-19, pulmonary embolism, MSCT pulmonary angiography

PULMONARY THROMBOSIS/EMBOLISM IN A PATIENT WITH COVID-19

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INTRODUCTION: Nonmelanoma skin cancers (NMSC) are the most frequent malignancies in solid organ transplant recipients. Most common type of NMSC in these patients are squamous cell carcinoma (SCC) and they tend to be more aggressive compared to general population. Case Description: A 71-year-old Caucasian male was admitted to Department of Dermatology with a crusted, scaly lesion which was located all throughout the midscalp of his head, with the exception of the place where skin graft has been inserted. Before coming to our clinic, the patient has already undergone 3 surgical removals of SCC on his scalp. Surgical removal of the new lesion was no longer possible because of its size and localization and so radiotherapy was suggested as the treatment of choice. 11 years prior to his first dermatological examination at our unit, the patient has had a heart transplant. Because of that, he has been undertaking continuous immunosuppressive therapy (Cyclosporine 2x150mg, Prednisone 10mg and Azathioprine 2x100mg daily). Biopsies were taken from three different locations on the lesion and pathohistological analysis confirmed the diagnosis of SCC. The whole area affected by SCC was successfully treated by superficial x-ray therapy (SXRT) with a total dose of 60 Gy. The primary lesion healed adequately, but in the following year five more SCCs occurred throughout the patient’s head and body and all of them were removed surgically. Discussion: Patients after heart transplantation are at higher risk of developing skin cancer in comparison to other transplant patients. They occur because chronic immunosuppression can lead to decreased immune-mediated tumour surveillance. Surgery is usually first line-therapy for SCC, but in our patient, radiotherapy was administered because, after three surgical removals, SCC relapsed and spread throughout the scalp. Conclusion: Management of NMSC in organ-transplant recipients should focus on aggressive treatment of established malignancies, regular full-skin examination, educating post-transplant patients, and prophylactic measures.

Keywords: non melanoma skin cancer, heart transplant, immunosuppressants, radiotherapy

THE ROLE OF MACHINE LEARNING IN CONSTRUCTION OF PREECLAMPSIA PREDICTION MODELS

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Introduction: Preeclampsia is a pregnancy-associated disorder with new-onset hypertension, which occurs most often after 20 weeks of gestation and frequently near term. The estimated prevalence is 2-8% and attributes to 16% of maternal deaths. Machine learning (ML) is a computer science discipline focused on algorithms that improve automatically through the experience without being explicitly programmed. Aim: Literature review of machine learning generated models for preeclampsia prediction. Methods: The searches using a combination of “machine learning”, “deep learning”, “vector machine”, and “preeclampsia” as topics were conducted through Web of Science, including all bases. The search yielded 39 results from which 9 were included in this paper. Only full-text articles that developed prediction models for preeclampsia were included. Results: All of the reviewed studies established models for the prediction of preeclampsia. Studies included one prospective cohort, four retrospective cohort, two nested case-control, and two case-control studies, with sample sizes ranging 77-58276 patients. Smaller sample sizes limited the power of machine learning, as overfitting of a model could have occurred. Eight of nine studies divided data into training and test sets. Four studies constructed models using electronic health records, with the remaining five studies using novel concepts with urinary proteins, plasma metabolites, DNA microarray data, cell-free DNA, or circulating-RNA as their model-building data. The replicability of the four studies was questionable as protocols and data used for model construction are complex. The models examined accuracies of 72-100% with AUC ROC ranging from 0.57-0.964. One study examines conventional regression methods yielding a more accurate
pre eclampsia prediction, being the only study with such results. CONCLUSION: Results of the reviewed studies indicate the need for revaluation of the current risk assessment guidelines. Validation of models and the replication of studies on larger cohorts is needed, where machine learning would operate better. Novel biomarkers can also serve in further research into pre-eclampsia pathogenesis.

Keywords: pre-eclampsia, machine learning, prediction model

47. CEREBRAL DURAL ARTERIOVENOUS FISTULA: A CASE REPORT
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INTRODUCTION: We present a case of an older woman who developed symptomatic intracranial dural arteriovenous fistula following chronic transverse sinus thrombosis. CASE DESCRIPTION: A 73-year-old female patient was hospitalized in another regional hospital after experiencing an ischaemic stroke presented with dysphasia and confusion. Resolution of symptoms was observed during the hospital stay. MR showed no signs of acute ischemia. CTA and MRA were then performed, showing dural arteriovenous fistula (dAVF) of the left transverse sinus and the absence of the left sigmoid sinus. After transfer to our Hospital, digital subtraction angiography (DSA) was performed for detailed characterization of the dAVF. Via the transarterial approach, an extensive dAVF of the left transverse sinus was visualized, vascularized predominantly by the left middle meningeal artery (MMA). Total occlusion of the left sigmoid sinus with the retrograde flow into the dilated and tortuous cortical veins was shown. The fistula site was reached through the MMA and two ampules of endovascular nonadhesive embolic agent were injected. Postembolization angiograms showed complete occlusion of the fistula. DISCUSSION: Intracranial dural arteriovenous fistulas are abnormal shunts between dural arteries and dural sinuses, cortical or meningeal veins. They are mostly idiopathic, although sinus thrombosis, previous trauma or craniotomy can trigger their formation. Symptomatology depends on the fistula site and pattern of venous drainage. Our patient had hyperperfusion symptoms of the left temporal and occipital lobe due to venous stasis and consequently reduced arteriovenous pressure gradient which caused less arterial blood to be delivered. Treatment-wise, the endovascular approach has become the mainstream in the past few decades. CONCLUSION: Cerebral dural arteriovenous fistulas are a complex pathology that requires comprehensive knowledge of anatomy, pathophysiology, pathology and neurology. It is essential to keep them in mind as they can cause impressive clinical presentations but could be treated successfully in most cases and reverse the clinical course.

Keywords: cerebral dural arteriovenous fistula, sinus thrombosis, endovascular treatment

48. ACUTE SOLAR MACULOPATHY – CASE REPORT
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INTRODUCTION: Acute solar maculopathy is a result of acute harmful photochemical effects of focused sunlight on the photoreceptors and retinal pigment. Risk factors for developing solar maculopathy include young age, clear intraocular lens, photosensitizing drugs and psychiatric diseases. Although solar maculopathy is an acute accident, it is interesting because of its acute changes and possible connections with chronic changes associated with permanent solar exposure and recently more frequent screen and technical light exposure (microscope, lasers, etc.). CASE DESCRIPTION: A 35-year-old woman presented with acute, bilateral vision loss after staring directly at the sun for several minutes in the Alps in summer, while performing solar yoga for the first time. On examination a day after, her visual acuity (VA) was 0.25; in both eyes, which caused her panic. A small, yellow-brown, round foveal lesion was identified in both fundi. Amsler grid testing revealed a bilateral central scotoma. Spectral-domain optical coherence tomography (SD-OCT) showed a bilateral foveolar cyst. Treatment was macular supplementation rich with beta carotenoids, lutein, and zinc. At the three-month follow-up, the patient's VA was restored to 20/20; the retinal SD-OCT exam showed regular anatomy. DISCUSSION: SD-OCT exam macular cyst changes strictly followed the visual improvement of the patient. Restitution ad integrum was the final SD-OCT finding. CONCLUSION: SD-OCT technique was shown as a great diagnostic tool in diagnosing, predicting and follow up for solar maculopathy damage and healing dynamics.

Keywords: optical coherence tomography, solar maculopathy, sunlight adverse effects

49. CANCER TREATMENT-INDUCED ARRHYTHMIA CASE REPORT
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INTRODUCTION: Atrial fibrillation (AF) is the most sustained supraventricular arrhythmia. Symptoms that can occur are palpitations, weakness, shortness of breath and pre-syncope. Cardiac conditions connected to the etiology of the AF are hypertension, congestive heart disease, rheumatic heart disease and ischemic heart disease. Non-cardiac conditions having a significant impact on the prevalence of the AF are hyperthyroidism, hypoxemia, alcohol intoxication and the use of some chemotherapeutics (anthracyclines, antimetabolites and antimetabolite drugs). CASE DESCRIPTION: A 69-year-old patient presented to the emergency room with tachycardia and high oxygen saturation levels (24.6 mmHg). The patient wascomplaining of the pain in the right knee and oedema of both legs, without chest pain. Blood pressure was 130/70 mmHg, pulse 160bpm, SpO2 92%. From chronical treatment refers bisoprolol, pantoprazol, moxonidine. The data of history revealed adenocarcinoma (most likely originated from kidney), metastasis in bones, mediastinum, right hilar lymph nodes, arteral hypertension. Radiotherapy of the thoracic vertebrae (Th-2), lumbar (L1) and left scapular area 40 days prior to admission was administered. Two weeks prior to admission patient underwent a first cycle of chemotherapy using vinblaste. The diagnosis of deep venous thrombosis was ruled out in hospital emergency ward. On admission to hospital, ECG analysis showed Atrial fibrillation of unknown time of origin (CVA). DISCUSSION: The patient was treated with radiotherapy and chemotherapy. Theoretically, both treatments can cause AF. In this case, the dose of radiation used for radiotherapy was too low to have an impact on AF. Considering that antimetabolite drugs (in this case vinblastine) can affect heart conduction, cause T-wave changes, QTc interval prolongation. We conclude that vinblaste had an impact on newly diagnosed AF. CONCLUSION: To conclude, not enough studies have been made on this topic, therefore a connection between these entities is not defined. Hence, we are proposing a connection between treatment with vinblaste and AF.

Keywords: arrhythmia, atrial fibrillation, oncology

50. COCHLEAR IMPLANTATION AFTER DEAFNESS CAUSED BY MENINGITIS
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INTRODUCTION: We are presenting a case of a 53-year-old female with deafness after Streptococcus pneumoniae meningitis. CASE DESCRIPTION: A 53-year-old female patient was admitted to our department for urgent cochlear implantation. 5 months ago, the patient had meningitis caused by S. pneumoniae. She was in a coma and was mechanically ventilated. After one month she became conscious but paraplegic and communication was very difficult. After three weeks of physical therapy, she could move but hemiplegia was still present. Pure tone audiometry showed sensorineural deafness. MRI of the head and temporal bone showed a high signal intensity in both cochleas but higher in the right cochlea, which is a sign of postinfectious fibrosis. Otoscopy was normal. We decided to perform an urgent cochlear implantation in the left ear, where were still signs of fluid inside the cochlea which indicated only partial fibrosis. Intraoperatively full insertion could not be performed due to fibrosis but partial insertion was performed. After activation of the cochlear implant, she showed significant improvement and after a month she could communicate. DISCUSSION: Meningitis, especially bacterial, can result in severe sensorineural hearing loss. Hearing loss can occur immediately or it can progress during the following weeks and months. After the acute stage, the inflammation may progress to fibrosis and ossification of the cochlea lumen. This can make
51. ENDOMETRIAL STROMAL SARCOMA MISTAKEN FOR TWIN PREGNANCY
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INTRODUCTION: Up to 10% of all uterine sarcomas are endometrial stromal sarcomas. Although it is mainly diagnosed in the age group of 40-50 years old, the number of cases reported in younger women seems to be increasing rapidly. ESS classification is based on cell morphology and mitotic count into three grades and grade II and III are high-grade sarcomas. Histopathological examination revealed endometrial stromal sarcoma. Additional cytogenetic test was performed and YWHAE-FAM22 gene fusion characteristic for high grade EES was found. After total abdominal hysterectomy with bilateral salpingo-oophorectomy patient underwent combined chemotherapy. DISCUSSION: It is challenge to diagnose ESS correctly. Clinical manifestation is nonspecific, with wide range of symptoms such as abnormal uterine bleeding, pelvic mass or abdominal pain. Well-prepared, representative biopsy material is necessary for correct diagnosis. Cytogenetic tests enable to distinguish low and high grade sarcoma. It is necessary to consider this diagnostic despite the nonspecific symptoms even in younger women.

Keywords: endometrial stromal sarcoma, myoma, pregnancy

52. WARTHIN LIKE VARIANT OF PAPILLARY THYROID CANCER. UNUSUAL FORM OF NEOPLASM: CASE REPORT
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INTRODUCTION: Papillary thyroid cancer (PTC) is a common form of thyroid cancer and accounts for 35-85% of all thyroid cancers. The Warthin-like variant of papillary carcinoma (WLPTC) is a rare and unusual form of thyroid cancer described in 1995 by Apel. This carcinoma resembles the Warthin tumor of the salivary glands. It has recognizable features of the papillary architecture with prominent lymphocytic stroma in fibro-vascular cores. WLPTC has similar or less aggressive clinical outcomes same as PTC. CASE DESCRIPTION: We present a case of WLPTC, located in the left thyroid lobe in a 27-year-old female patient with multinodular goiter. Thyroid function test results showed marginal hypothyroidism. The patient was treated with 50 mg of levothyroxine-sodium. Thyroid ultrasound revealed roughly slurred echotexture. On both sides, multiple smaller hypoechoic nodules were seen. Fine-needle aspiration biopsy revealed inhomogeneous hypoechoic nodule (28mm in diameter). Neck lymph nodes showed neither lymphadenopathy nor pathological changes. FNA cytopenurture results came back as “suspicous” for a diagnosis of papillary thyroid cancer. A total thyroidectomy was performed. The pathology report showed a circumscribed tumor with papillary architecture that looks like a Warthin-like variant of papillary carcinoma. DISCUSSION: Nine main histopathological variants of papillary thyroid cancer were described by WHO. The Warthin-like tumor was classified as the oncocytic variant. A distinct histological feature that differentiates WLPTC from other types or WHO. The Warthin-like tumor was classified as the oncocytic variant. A Warthin-like variant of papillary carcinoma. showed a circumscribed tumor with papillary architecture that looks like a low-grade tumor of the salivary glands. It has recognizable features of the papillary variant of papillary carcinoma (WLPTC) is a rare and unusual form of thyroid cancer described in 1995 by Apel. This carcinoma resembles the Warthin tumor of the salivary glands. It has recognizable features of the papillary architecture with prominent lymphocytic stroma in fibro-vascular cores. Tumor of the salivary glands. It has recognizable features of the papillary variant of papillary carcinoma (WLPTC) is a rare and unusual form of thyroid cancer described in 1995 by Apel. This carcinoma resembles the Warthin tumor of the salivary glands. It has recognizable features of the papillary architecture with prominent lymphocytic stroma in fibro-vascular cores. WLPTC has similar or less aggressive clinical outcomes same as PTC. It is challenge to diagnose WLPTC correctly. Clinical manifestation is nonspecific, with wide range of symptoms such as abnormal uterine bleeding, pelvic mass or abdominal pain. Well-prepared, representative biopsy material is necessary for correct diagnosis. Cytogenetic tests enable to distinguish low and high grade sarcoma. It is necessary to consider this diagnostic despite the nonspecific symptoms even in younger women.

Keywords: endometrial stromal sarcoma, myoma, pregnancy
INTRODUCTION: Transverse colon volvulus in children is a rare entity. It has been found 40 cases reported in the worldwide literature. It is presented with abdominal pain and vomiting, with a history of chronic constipation. Mental retardation can be a predisposing factor for TCV. CASE DESCRIPTION: We present a case of transverse colon volvulus in a 14-year-old girl with mental retardation. On admission, the patient was presented with abdominal pain, vomiting and constipation that last 4-5 days. Vomiting was once a day. She was subfebrile up to 37.6 °C. Her abdominal examination revealed distended, tense, diffusely painful abdomen. Operative findings showed a 360-degree transverse colonic volvulus (TCV). After the reduction of volvulus, loop ileostomy was formed. The occlusion of the ileostomy and biopsy of the rectum were done on the 20th postoperative day. Biopsy showed the presence of ganglia cells. The patient was discharged 1 month after surgery. DISCUSSION: It is a great challenge to make an accurate diagnosis of transverse colon volvulus. Majority of cases are diagnosed intraoperatively. Transverse colon volvulus represents only 1.5% of LBV in children. Chronic constipation in neurologically impaired patients was a risk factor predisposing to TCV. CONCLUSION: Pediatric patient with neurological conditions and mental retardation present an increased risk of colon transversum volvulus due to chronic obstruction.

Keywords: transverse colon, mental retardation, bowel obstruction, volvulus

56. CASE REPORT: ECTOPIC ACTH SECRETION IN A OLD FEMALE PATIENT WITH HIDDEN LUNG TUMOR

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INTRODUCTION: Ectopic adrenocorticotropic hormone (ACTH) secretion was the first paraneoplastic endocrine syndrome described in the literature. The most common tumors associated with ectopic ACTH production are small cell lung cancer and atypical carcinoids. The localization of the source of ectopic ACTH can be problematic. CASE DESCRIPTION: A 76 years old woman who is a patient of Covid isolators of the Clinical Center of the University of Sarajevo at Podhradstvi, presented to the Endocrinology clinic because of uncontrolled hyperglycemia. A physical examination revealed mild hypertension, truncal obesity, hyperglycemic and normokalaemic uncontrolled hyperglycemia. A CT scan of the lungs revealed a 3 cm sized nodule in the upper lobe of the left lung. She was subfebrile up to 37.6 °C. Tests confirmed elevated arterial uric acid (10.2 mg/dl) and plasma ACTH 15.2 pmol/L. CT scan of the lungs revealed a 3 cm sized nodule in the upper lobe of the left lung. After surgical exploration, the patient was discharged 1 month after surgery. DISCUSSION: It is a great challenge to make an accurate diagnosis of colon transversum volvulus. Majority of cases are diagnosed intraoperatively. Transverse colon volvulus represents only 1.5% of LBV in children. Chronic constipation in neurologically impaired patients was a risk factor predisposing to TCV. CONCLUSION: Pediatric patient with neurological conditions and mental retardation present an increased risk of colon transversum volvulus due to chronic obstruction.

Keywords: transverse colon, mental retardation, bowel obstruction, volvulus

58. RITUXIMAB AS A TREATMENT OPTION FOR IMMUNE THROMBOCYTOPENIA

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INTRODUCTION: Immune thrombocytopenic purpura (ITP) is one of the most common hematological pediatric diseases. ITP is an autoimmune disease with detectable antibodies against several platelet surface structures leading to platelet destruction. Corticosteroids have been the starting therapy for the past 50 years. Other treatment options include intravenous immunoglobulin (IVIG), various immunosuppressants, thrombopoietin receptor agonists, splenectomy and biologic (rituximab). CASE DESCRIPTION: The patient whose case we present is a 16 year old girl. In June 2019 patient was admitted to Hematology Department due to profuse vaginal bleeding and profound low platelet count (6 x 10^9 / L). Tests confirmed antiplateled antibodies and ITP was diagnosed. Treatment included blood derivatives, IVg and corticosteroids. Since patient was resistant to given therapy, rituximab was successfully applied (standard regime weekly 375 mg/m² body weight). DISCUSSION: In typical cases of ITP in children treatment include corticosteroids or IVg. In rare cases of ITP as in our patient biological therapy such as rituximab is a treatment option. It is a monoclonal antibody that interacts with CD20 receptor on the surface of B cells. Rituximab is a valuable treatment option for children with ITP refractory to steroids and IVg. One year follow-up showed no bleeding, and the findings of a complete blood count have been in reference values.

Keywords: immune thrombocytopenic purpura, rituximab, children
CONCLUSION: Examination and the treatment entails surgical intervention. An important result in NIPH. The golden diagnostic standard is histopathological discharge in general good condition with a satisfactory glycemic control.

Eventually, pancreatic biopsy was performed, presenting spilled proliferation of abnormal glucose level at 41 mg/dl, insulin at 12 mIU/L and C-which ended in symptomatic hypoglycaemia. Laboratory tests showed the not improve. Therefore, a supervised 72 hour fast was performed twice, to discontinue the treatment was made. Unfortunately, the symptoms did glucometer measurements, which made it impossible to continue his hypoglycemic episodes. According to the patient, in the previous 3-4 months year-old patient was admitted to our Clinic to diagnose the cause of estimated at 0.5–15% of organic hyperinsulinemias. 

INTRODUCTION: Pleural effusions are a frequent finding in patients with bacterial pneumonia and this complication is called a parapneumonic pleural effusion. Pathogenetically, it can occur as a complication of bacterial pneumonia, chest injury or fluid accumulation, viral infections, systemic infections or pneumonia. Although a number of these patients can be treated with antibiotics alone, there is a part of these cases that can present with severe complications. The correct diagnosis can only be made with a detailed history, physical examination, chest radiography and diagnostic thoracentesis. CASE DESCRIPTION: In this case we will present a 23-year-old medical student S.F. The patient stated that he had felt dull pain in his right shoulder and neck, light sweating at night and a temperature up to 37.2°C for about ten days before the initial examination. After 6 days, the pain had spread into his right scapular and right pectoral region. The patient started to feel intense pain in the aforementioned regions, he started sweating more intensely and his temperature was 38°C. Three different COVID tests showed the patient was negative for SARS-CoV-2. Nontuberculous pleural infections have a high mortality rate and knowing if a pleural effusion will progress into a complicated effusion or empyema is very difficult. An early diagnosis is important because an effective antibiotic regimen can be commenced as soon as possible. In this case, a thoracic surgeon was consulted and we were advised not to do a diagnostic thoracentesis due to the small amount of liquid. We proceeded with empirical antibiotics with regular ultrasound and X-ray monitoring. CONCLUSION: The differential diagnosis of a parapneumonic effusion is very diverse. The entire world is fighting the coronavirus pandemic, and thinking of this virus as the cause of this pathology is logical. However, a bacterial infection demands a prompt response and antibiotics should be given early.

Keywords: COVID19, pleural effusion, pneumonia, lung ultrasound

NONINSULINOMA PANCREATOGEOUS HYPOGLYCEMIA - A RARE CASE OF NESIDIOBLASTOSIS IN AN ADULT WITH TYPE 2 DIABETES MELLITUS

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INTRODUCTION: Nesidioblastosis (NB) is a rare cause of hyperfunctioning pancreatic β cells, usually associated with excessive insulin secretion and hypoglycemia. This condition results in a disease called noninsulinoma pancreatogenous hypoglycemia (NIPH) which incidence in adults is estimated at 0.5-15% of organic hyperinsulinemias. CASE DESCRIPTION: 53-year-old patient was admitted to our Clinic to diagnose the cause of hypoglycemic episodes. According to the patient, in the previous 3-4 months he has experienced symptomatic events of hypoglycaemia, documented by glucometer measurements, which made it impossible to continue his professional career. He was previously diagnosed with type 2 diabetes mellitus and treated with metformin for approximately 2 years. Neither anamnesis nor physical examination were significant. Initially, the decision to discontinue the treatment was made. Unfortunately, the symptoms did not improve. Therefore, a supervised 72 hour fast was performed twice, which ended in symptomatic hypoglycemia. Laboratory tests showed the following results - glucose level at 41 mg/dl, insulin at 12 mIU/L and C-peptide at 3 ng/ml. Additionally, imaging studies revealed no abnormalities. Eventually, pancreatic biopsy was performed, presenting spilted proliferation of abnormal β cells. Eventually, NB in course of nesidioblastosis was diagnosed. After distal resection of the tail and part of the pancreatic shaft, a significant clinical improvement was noticed. The patient was discharged in general good condition with a satisfactory glycemic control. DISCUSSION: We present rather unusual case of adult onset of NB resulted in NIPH. The golden diagnostic standard is histopathological examination and the treatment entails surgical intervention. An important diagnostic clue may be the fact that postbariatric surgery patients and families affected by this disease are more likely to develop nesidioblastosis. CONCLUSION: NIPH is a rare condition, which requires thorough diagnosis as clinical manifestations vary widely. Thus, after excluding the most common causes of hypoglycemia, we should remember about nesidioblastosis.

Keywords: noninsulinoma pancreatogenous hypoglycemia, NIPH, nesidioblastosis

MANAGING TUBERCULOUS MENINGITIS IN CHILDREN: CASE REPORT

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INTRODUCTION: Tuberculous meningitis is a highly devastating central nervous system disease caused by Mycobacterium tuberculosis. Most children present with symptoms such as headache, fever, vomiting and irritability. Children with more advanced disease may have signs of meningeal irritation, raised ICP, cranial nerve palsies, neurological deficits, altered sensorium and movement disorders. Mortality rates of this condition in children vary between 5 and 23 per cent. CASE DESCRIPTION: We report a case of 2-year old toddler presenting with a convulsive seizure, foaming at the mouth and unresponsiveness at the time of admission. 2 weeks prior the patient had a thoraco-cervical rash and a 38 °C axillar temperature. MRI on admission showed arachnoidal enhancement and supratentorial changes typical for meningal tuberculosis. The patient was successfully treated with isoniazid, rifampin, Ethambutol and Pyrazinamide for 2 weeks before being released with a dual antibiotic treatment. DISCUSSION: The peak incidence of Tuberculous meningitis occurs in younger children who are less than five years of age, and most children present with late-stage disease. Early diagnosis and treatment of Tuberculous meningitis plays a vital role in determining the disease outcome. This is challenging given that, early symptoms are often non-specific, so high degree of suspicion is required. The various methods used in the diagnosis of Tuberculous meningitis include cerebrospinal fluid cellular and biochemical analysis, microbiologic confirmation and other testing such as neuroimaging. CONCLUSION: Managing tuberculous meningitis in children , especially in cases with other tuberculosis hotspots in the body is still a difficult task. This is proven by high mortality rates and complications of this disease. However , new diagnosis and treatment protocols with the collaborative knowledge of previous cases bring new hope for the future of these patients.

Keywords: child, tuberculosis meningitis, central nervous system

TEMPOROMANDIBULAR JOINT DYSFUNCTION AS A RARE MANIFESTATION OF LYME DISEASE

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BACKGROUND: Lyme disease is a tick-borne disease caused by Gram-negative Borrelia spirochetes. The clinical manifestations of Lyme borreliosis are varied, they can affect many systems and organs. Clinical presentation of the first stage of the disease is erythema migrans, which often goes unrecognized. The joint manifestation primarily involves the knee joint, but all joints can be affected. The diagnosis is made on the basis of the clinical picture, serological tests are an auxiliary criterion and their negative result does not exclude infection. Temporomandibular joint disorders (TMJ) occur in up to 15% of the general population, most often in people aged 20-40 and twice as often in women. They are characterized by disturbed joint function with limited range of motion or joint pain, pain in chewing muscles and nerve endings that innervate the muscles of the head and neck. In 40% they disappear spontaneously. AIM: The aim of the study is to draw attention to the rare manifestation of Lyme borreliosis in the form of TMJ. MATERIALS AND METHODS: After an analysis of the PubMed database using the search terms “Lyme disease” and “TMJ” we found that there are only 3 papers relating to temporomandibular joint disorders caused by B. burgdorferi infection were qualified for the paper. RESULTS: TMJ are a rare manifestation of Lyme disease as indicated by the low number of available literature on this issue. CONCLUSIONS: In the case of TMJ, considering the ineffectiveness of the current treatment and the epidemiological situation at the patient’s
place of residence, B. burgdorferi infection should be considered as an etiological factor. Only early diagnosis and thus the start of antibiotic therapy is effective and prevents the long-term consequences of Lyme disease.

Key words: temporomandibular, borrelia, borreliosis, Lyme

63. CLINICAL CHARACTERISTICS, DIAGNOSIS AND MANAGEMENT OF OCULAR SARCOIDOSIS
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BACKGROUND: Sarcoidosis is a multisystem autoimmune disease presenting with the formation of noncaseating granulomas in different tissues, including the eye. Any structure of the eye and its adnexal tissues can be affected. Ophthalmic manifestations can be isolated, or presenting simultaneously with other organ involvement. A wide range of treatment modalities is available for the management and long-term control of the inflammatory process in ocular sarcoidosis which is critical in order to prevent complications and visual impairment. AIM: To review the current knowledge on the diagnostic and therapeutic approach of ocular sarcoidosis, with emphasis on the importance of clinical examination, multidisciplinary approach and the role of new therapeutic modalities.

METHODS: A thorough systematic literature search was performed in electronic databases using a combination of “ocular sarcoidosis”, “sarcoid uveitis”, “diagnosis of ocular sarcoidosis”, “ocular sarcoidosis AND immunosuppression/biologic agents” search items. We reviewed multicentre studies, large retrospective cohorts and reviews published between 1990 and 2021. Only studies in English were included. RESULTS: Uveitis is the most common feature of ocular sarcoidosis, followed by conjunctival and lacrimal gland involvement. Complications, such as cataract and glaucoma, may be a result of the inflammatory process or adverse effects from therapy. Diagnosis is based on medical history, clinical, imaging and laboratory examinations, whereas histological confirmation from the affected tissue(s) remains the gold standard. Topical and systemic corticosteroids are used as the first-line therapy for sarcoid uveitis. Biological and immunosuppressive agents serve as an advanced solution in the management of chronic and persistent cases. CONCLUSION: The diagnostic and therapeutic modalities for ocular sarcoidosis have evolved over time, providing a more efficient approach. However, the management of disease still remains challenging in several cases. Setting an early diagnosis and starting appropriate therapy are crucial for preventing complications. Future studies should aim to develop more sensitive biomarkers and more effective and safe immunomodulatory agents.

Keywords: ocular sarcoidosis, granuloma, uveitis, biopsy, immunosuppression