UNIVERSITATEA DE MEDICINĂ,
FARMACIE, ȘTIINȚE ȘI TEHNOLOGIE
„GEORGE EMIL PALADE”
DIN TÂRGU MUREȘ

BOOK of ABSTRACTS

6/2023

George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
University Days
December 11 - 15, 2023, Targu Mures

Scientific Session of University Academic Staff
International Conference of PhD Students and Young Doctors

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Scientific Session of University Academic Staff Medicine and Pharmacy

George Emil Palade University of Medicine,
Pharmacy, Science, and Technology of Targu Mures
University Days

December 11-15, 2023, Targu Mures, Romania

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MEDICINE AND PHARMACY

BIOCHEMISTRY

EVALUATION OF PREANALYTICAL ERRORS AND QUALITY INDICATORS IN A PRIVATE LABORATORY AND A HOSPITAL

Eniko Nemes-Nagy[1], Kincso Kanyadi[2], Istvan Kovacs[2], Zoltan Preg[2], Bernadett Csipor[2]

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Background: Most of the mistakes in the laboratories are due to preanalytical errors, some of which could be avoided, thus increasing the quality of investigations. The aim of the study was to compare the frequency of errors in the preanalytical phase and the values of quality indicators in a local private laboratory and a clinical laboratory in Budapest. **Material and methods:** The study included a 3-year follow-up of the data from the hospital's laboratory and results of a 4-year period were processed in case of the private laboratory regarding the sigma index and the occurrence of different preanalytical errors. GraphPad InStat version 3 was used for statistics. **Results:** Hemolyzed serum/plasma was the most frequent type of compromised sample in the clinical hospital, improper sample volumes were on the second position. In the private laboratory the late sample delivery represented the major problem followed by improper self-sampling of urine and stool. Quality indicators presented improvement during the studied period in both laboratories, the sigma values were higher in the unit for ambulant patients. **Conclusions:** The well-trained, stable, experienced personnel in the private laboratory achieved excellent quality indicators of the preanalytical phase, self-sampling of ambulant patients being the major source of errors. In the hospital's laboratory samples are received from different clinical sections with some employees having limited professional background and certain patients suffer from severe diseases making sampling more difficult, which could explain the increased number of preanalytical errors.

Keywords: Quality indicator, Sampling, Preanalytical error, Sigma, Personnel

BIOCHEMICAL PARAMETERS IN HYPERTENSIVE PATIENTS WITH AND WITHOUT COGNITIVE DYSFUNCTION

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Background: Several hypertensive patients present pathological values of laboratory parameters and different phases of cognitive dysfunction, which can lead to vascular dementia. The aim of the study was to reveal possible differences in biochemical parameters in hypertensive patients with and without cognitive dysfunction. **Material and methods:** The study was performed on fifty grade 2 and 3 hypertensive patients admitted to the Cardiovascular Rehabilitation Clinic in Târgu Mureş. The MOCA standard questionnaire was used for evaluation of their cognitive status. Biochemical parameters were measured by the Konelab Prime 60i analyzer. **Results:** The average value of microalbuminuria was significantly higher in the hypertensives with cognitive dysfunction compared to those with normal cognitive status ($p<0.05$). Mean serum glucose values were slightly higher in the subgroup having cognitive dysfunction compared to the other subgroup, because diabetes mellitus as an associated comorbidity was twice more frequent in the first subgroup. Average cholesterolemia was higher in the subgroup of hypertensive patients with normal cognitive function compared to the other subgroup, the difference is not quite significant. **Conclusions:** Several differences could be observed in the biochemical parameters of hypertensive patients with and without cognitive dysfunction. The presence of more severe albuminuria in the subgroup with cognitive dysfunction can be manifestation of microvasculopathy, which damages different organs. The high frequency of diabetes mellitus as a comorbidity can lead to more severe complications.

Keywords: Biochemical parameters, Hypertension, Cognitive dysfunction, Microalbuminuria, Diabetes mellitus

CARDIOVASCULAR SURGERY

CORRELATION OF SERUM BIOMARKERS WITH UNSTABLE CAROTID ATHEROSCLEROTIC PLAQUES IN PATIENTS WITH SEVERE CAROTID STENOSIS

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Background: Cerebrovascular diseases, such as stroke and transient ischemic attack (TIA), are a common pathology in the elderly, causing significant neurological deficits. One of the main causes is the development of atherosclerotic plaque at the level of the carotid artery. **Material and methods:** This is a prospective study involving 32 patients with more than 70% carotid artery stenosis caused by atherosclerotic plaque. Blood samples were taken from the patients for analysis, then they underwent carotid endarterectomy (CEA), and the carotid plaques were examined histologically. We investigated the correlation of serum inflammatory biomarkers like neutrophil, lymphocyte, and monocyte levels with histological signs of plaque vulnerability such as calcification, neovascularization, intraplaque hemorrhage and inflammatory infiltrate. **Results:** Statistical analysis of serum biomarker levels and the presence of histological changes in unstable plaques showed that in patients with a neutrophil/lymphocyte ratio greater than 1.8, the presence of intraplaque hemorrhage was specific. The presence of a massive inflammatory infiltrate was also correlated with a monocyte count greater than 0.55 (10^9/L). **Conclusions:** Considering that 71.8% of patients with severe carotid stenosis who underwent CEA had a stroke or TIA before the procedure, measuring the levels of serum biomarkers in advanced carotid atherosclerosis may prevent the occurrence of these neurological diseases, as they are correlated with unstable plaques.

Keywords: carotid atherosclerosis, carotid endarterectomy, inflammatory biomarkers, unstable plaques, histological changes

DENTAL MEDICINE

THE ROLE OF TRIGEMINAL-FACIAL REFLEXES IN FACIAL ESTHETICS. A PRELIMINARY ELECTROMYOGRAPHIC STUDY

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Background: Dental and facial cosmetics have been found more and more frequently in the last decade among the interests of dentists. Many therapeutic procedures do not refer strictly to dental arches; they must also reshape the aspect of perioral or facial soft tissues. There are available specific procedures to solve the esthetic concerns of some patients regarding their facial look, including fillings and liftings, laser procedures, exercises, massage therapy, and more invasive surgical procedures. The electromyographic investigations in this preliminary study assessed the activity of the zygomaticus major muscle under mechanical stimulation of the lower lip based on the hypothesis that the activation of the Meissner corpuscles at the internal vermillion of the lower lip leads to an increased zygomaticus major muscle tonus. A trigeminal-facial reflex could explain that expectation. **Material and methods:** We used the BioEMGII electromyograph to pick the surface electromyographic activity level. At the same time, a mechanical stimulus was applied in the middle of the internal part of the lower lip by a bonding applicator used for composite filling materials. The device software picked and analysed four samples of electromyographic activity under the stimulus. **Results:** The results show an increased zygomaticus major muscle electromyographic activity under mechanical stimulation (9.2 mV in the right muscle and 3.6 mV in the left) compared with postural electromyographic activity (6.3 mV and 2.5 mV). **Conclusions:** The results from this investigation sustain the importance of restoring the upper incisors' length and appropriate relation to the lower lip in every oral rehabilitation, these teeth being important not only from an occlusal and dental esthetic point of view but also to improve facial esthetics.

Keywords: trigeminal-facial reflex, zygomaticus major, electromyography

THE MINISCREW-ASSISTED RAPID PALATAL EXPANSION: ADVANTAGES AND LIMITS

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Background: Traditional rapid palatal expansion methods are known to have side effects, including tooth tipping, a decrease in the thickness of the buccal bone, and a decrease in the height of the bone near the gums, which can result in receding gums. **Material and methods:** We used 15 classical implants and 15 thread length, thread pitch and diameter, thus turns implant surface design, insertion mode, as well as the correlations of these features with stability mini implant. They were analized two types of rate stability mini implants by measuring the tensile force with a traction machine and the kind of tensions that occur during orthodontic request. The insertion angle of the TADs can be optimized with a proper evaluation of palate bone morphology, preferably through the use of CBCT scans. **Results:** The most reliable types of orthodontic mini-implants are cylindrical-conical screw-type, with the optimal size of between 8-10 millimeters, one step thread ranging from 0.75 mm 0.80. **Conclusions:** Using orthodontic implants as temporary anchorage devices (TDA) has revolutionized the biomechanical orthodontic treatment planning, eliminating the problem of losing orthodontic anchorage.

Keywords: CBCT, MARPE, mini-screw, orthodontics, expansion

FISSURE SEALING: CURRENT USAGE RECOMMENDATIONS

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Background: Fissure sealing was proposed as a management strategy for pit and fissure caries since the 1950s by Buonocore. Since then, sealants have been widely used in many countries and appear to play a significant role in the decline of caries. In recent years, their use has also expanded for therapeutic purposes, and the variety of materials used has greatly increased. The aim of this study is to provide the latest recommendations for sealant use based on the most recent evidence-based literature. **Material and methods:** We conducted a comprehensive manual search with the assistance of the PubMed Central electronic library. Data collection was carried out in accordance with the PRISMA statement for systematic reviews. **Results:** Moderate-quality data support the recommendation to use resin-based sealants for both preventing and arresting incipient carious lesions. As for the use of glass-ionomer cements, their effectiveness is supported by low-certainty evidence, even in preventive sealing applications. **Conclusions:** Fissure sealants are still recommended for controlling caries on occlusal surfaces. Regarding the choice of materials for sealants, there is no doubt that modern composite resin sealants should be preferred over GICs. This work was supported by the University of Medicine Pharmacy, Science, and Technology George Emil Palade of Târgu Mureş Research Grant nr.164/7/10.01.2023.

Keywords: sealants, prevention, therapeutic use

DENTAL IMPLANT DISPLACED IN THE MAXILLARY SINUS – CASE REPORT

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Background: The implant-prosthodontic rehabilitaion of the posterior edentulous maxilla almost always requires the involvement of the maxillary sinus. In the literature the displacement of the implant in the maxillary sinus cavity is reported as a rare, but important complication. **Material and methods:** In this paper we present the case of a dental implant displaced in the maxillary sinus - during the osteointegration phase - with a consecutive chronic maxillary sinusitis. **Results:** The sinusitis was treated succesefully by classical surgical approach, the displaced implant and the surroundig inflammatory tissues were removed. **Conclusions:** Altough the sinusitis was succesfully treated - in the maxillo-facial surgeons view - the future implanto-prosthodontic rehabilitation is much aggravated or even compromised.

Keywords: Dental implant, Complication, Implant displacement, Maxillary sinusitis

MAXILLARY SINUSITIS – A FEARFUL COMPLICATION OF DIFFERENT DENTAL TREATMENTS

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Background: Maxillary sinusitis - besides of possible rhinogenic origin - is frequently odontogenic, and in some cases appears as a complication of different dental treatments, so - in such cases - it is considered iatrogenic. The treatment of maxillary sinusitis involves multidisciplinary approach and can compromise further oral rehabilitation. **Material and methods:** In this paper we present several cases of odontogenic maxillary sinusitis, due to complications of different dental treatments, such as endodontic treatment, dental implant placement, sinuslift procedures. **Results:** Based on CBCT scans we confirmed the diagnosis and established the treatment plan. The sinusitis can be treated succsefully by endoscopic or classic surgical means, but further oral rehabilitaion is more difficult or even compromised. **Conclusions:** Maxillary sinusitis - as complication of dental treatments - is a serious condition, which is to be treated with multidisciplinary approach, and it can compromise further oral rehabilitaion.

Keywords: Maxillary sinusitis, Complication, Dental treatment, Iatrogenic, Multidisciplinary

IN VITRO STUDY OF ANTIMICROBIAL EFFICIENCY OF DIFFERENT ENDODONTIC SEALERS

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[1]Department of Odontology and Periodontology, UMFST Tîrgu Mureş

Background: To ensure a successful, complication-free root canal treatment, it is crucial to establish and hermetically seal a sterile, bacteria-free root canal. The physical, chemical, and biological properties of the various materials employed in endodontics are pivotal in attaining this condition. The objective of this research is to examine and compare the antibacterial and antifungal activity of three distinct types of sealers under in vitro circumstances. **Material and methods:** The experiment involved the use of three materials: Endomethasone, Adseal, and MTA. All three were subjected to testing against Escherichia coli, Staphylococcus aureus, Enterococcus faecalis, Streptococcus mutans, and Candida albicans microorganisms. The testing was conducted on both Müeller Hinton and Complex media, respectively, using the agar diffusion method. Wells of 3 mm diameter were prepared in sterile conditions on inoculated media. The samples were incubated at 37 °C for 18 hours, and the zones of inhibition were measured at five different points surrounding each sample, expressed in millimetres. The tests were repeated using blood-contaminated materials, and statistical analysis was performed on the results obtained. **Results:** The study found that Endomethasone exhibits the highest antimicrobial activity, with an average inhibition zone radius of 5.8 mm, followed by Adseal (3.11 mm) and MTA (3 mm). The most resistant bacteria was identified as E. faecalis. Endomethasone was also found to be the most effective against C. albicans. However, the diameter of the zones of inhibition was reduced in blood-contaminated samples across all tested substances. **Conclusions:** All test substances exhibit antimicrobial activity. From this perspective, Endomethasone is the most suitable for daily dental use. While bactericidal activity of MTA has not been demonstrated in all cases, bacteriostatic activity has been shown for this sealer. Additionally, it is important to note that inadequate removal of blood from the canal can reduce the efficiency of the tested materials against remaining microbes.

Keywords: endodontics, antimicrobial, sealer

COMPARISION BETWEEN TWO TYPES OF ORTHODONTIC MINISCREWS AFTER DIFFERENT DURATION OF INTRA-ORAL USE

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Background: Orthodontic anchorage is improved by using miniscrews. Miniscrews are devices that are temporarily attached to the jaw bone in order to facilitate tooth movement. The main objective of this study was to evaluate the insertion torque, of two types of orthodontic miniscrews intraorally used for different durations. Comparison of their properties with new, unused miniscrews of the same type and to correlate the intraoral use time with changing parameters was also aimed. **Material and methods:** A total number of 51 orthodontic miniscrews of the same dimension (1.6 x 8 mm) from 2 different manufacturers, Yesanchor OrlusTM (conical) and Link MIS TM (cylindrical) were evaluated in this study. Each type of miniscrews was divided into the GC control groups (5 of Yes Anchor and 5 Link) and the GI group, in which the devices were used intraorally. According to the duration of intraoral use, two subgroups for each category were made: GIY1 ≤ 12 months (n=10), GIY2 ≥ 12 months (n=15), GIM1 ≤ 12 months (n=7), and GIM2 ≥ 12 months (n=9). High-density artificial bone was used to test the insertion torque of each miniscrew. **Results:** The maximum insertion torque values for MIS miniscrews, varied from 19.44 Ncm to 25.36 Ncm. For the Yesanchor miniscrews the torque values varied from 35.58 Ncm to 42.34 Ncm. Significant decrease in the intraorally used miniscrews' maximum insertion torque was demonstrated, both for the Yesanchor group ($p<0.05$) and the MIS group ($p<0.05$). Between the two subgroups of intraoral used devices, the differences were not statistically significant ($p>0.05$). **Conclusions:** Intraoral use of miniscrews decreases their maximum insertion torque, therefore from a clinical point of view, reinsertion of the same device might not be advisable.

Keywords: miniscrews, orthodontics, mechanical properties

ENT (OTORHINOLARYNGOLOGY)

QUALITY OF LIFE IN PARENTS OF CHILDREN WITH HEARING LOSS BEFORE AND AFTER COCHLEAR IMPLANTATION

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Background: The hearing loss cause detrimental effects on speech, language, educational development and cognitive outcomes in children. Hearing loss in children is common, and there has been substantial progress in diagnosis and management. Early identification of hearing loss and understanding its etiology can assist with prognosis and counseling of families. **Material and methods:** The motivation behind the study is to give parents the opportunity to express their level of stress felt throughout the entire hearing rehabilitation process. The main hypothesis of the study is to show the reduction of the stress level with the auditory-verbal rehabilitation that follows the cochlear implantation. Based on the parents' statements, several potential factors affecting the quality of life was analyzed: the age of the child at the time of the positive diagnosis, the child's communication skills before the implant, the time elapsed from the intervention to the activation, the benefit of auditory-verbal rehabilitation. **Results:** The employment of the parents in the pre- and immediately post-implantation period was declared in 58.3% of cases, 41.7% being unemployed. In 71.4% of cases, families benefited from rehabilitation. The results show that the level of pre-operative stress was significantly reduced, as a result of the surgical intervention. The importance of cochlear implantation intervention is supported by the parents' statements. Thus, the first step towards improving the parents' quality of life and implicitly increasing the chances of the child's recovery is the cochlear implant. **Conclusions:** We can outline the final conclusion from 2 big interconnected perspectives: the health of the child and the health of the parent. Thus, we encourage their initiative to become aware of the presence of a problem and to ask for professional help. All this leads to the improvement of the quality of life of the parent and the child

Keywords: cochlear implant, speech, hearing loss, quality of life, hearing rehabilitation

EPIDEMIOLOGY

HPV VACCINATION, PAST, PRESENT, FUTURE

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Background: Human papillomavirus (HPV) infections are the most common sexually transmitted infections. As a result, anti-HPV vaccines have been developed to reduce the incidence of HPV-induced cervical cancers (CCUs). To date, there are three licensed HPV vaccines: bivalent; tetravalent and nanovalent. Purpose. Review of studies investigating the social impact of HPV vaccination and studies in which the general population was assessed for willingness to vaccinate their children as well as reasons for vaccine refusal. **Material and methods:** We searched the PubMed database using the terms "HPV vaccine" in combination with the terms "knowledge", "education", "behaviors", "social media". **Results:** HPV vaccination is commonly proposed for adolescents aged 9-26 years. In Australia and America, vaccination among girls has shown an important decrease in the frequency of genital HPV lesions. HPV infection among Australian women decreased by 76% after one dose and by 86% after three doses. In America, a 75-80% drop in HPV infection rates has been reported in vaccinated women. HPV vaccination was introduced in over a hundred countries by the end of 2019, with high coverage of over 80% in Australia, Canada and around 50% in the United States. In Europe, most countries launched vaccination programs after 2006. Vaccination coverage above 80% was achieved only in the United Kingdom, Sweden and Norway, around 70% in Spain, Italy and Portugal, 50% in Germany and in most Eastern European countries, coverage was below 30%. **Conclusions:** Although HPV vaccination programs have been launched since 2006, coverage rates still remain lower than expected. There are higher vaccination coverage rates in high-income countries, lower rates and more cases of advanced CCU in low-income countries. In addition, countries that provided free HPV vaccines had higher coverage rates than those with paid vaccinations. Acknowledgements"This work was supported by the University of Medicine, Pharmacy, Science and Technology of Târgu Mureş Research Grant number 615/14/17.01.2019."

Keywords: HPV vaccination, HPV infection, Vaccine Efficacy, Vaccine Safety, Vaccination programmes

FORENSIC MEDICINE

DETERMINING ETHANOL LEVELS FROM SEQUESTERED HEMATOMAS IN AUTOPSY CASES. A TRICK OF THE TRADE.

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Background: Ethanol consumption is a frequent factor in violent deaths, its presence in a deceased victim may have civil and criminal consequences. Because of this, we undergo toxicology investigations as standard procedure in most forensic autopsies. When death is postponed following an injury, forensic doctors use a "trick-of-the-trade" and determine alcohol levels both in the blood found in isolated hematomas (such as subdural, epidural, and intracerebral hematomas) which act as a "time capsule" and in central bloodstream to establish the chronology of the injury, the causal link and approximate the time of death. **Material and methods:** The authors have investigated a series of cases in which this scenario occurred and the deceased where autopsied according to the current romanian legislation. Blood samples from the hematomas and from the bloodstream where analyzed with priority, and the ethanol levels were compared giving an estimation regarding the time of the head injury suffered prior to their death. Analysis was performed using gas chromatography on whole blood from both samples. **Results:** In all of the cases, the ethanol concentration in the hematoma was lower than that in the blood sample. **Conclusions:** We delve into potential explanations for the decrease in ethanol concentration within these isolated hematomas versus bloodstream and underline the importance of this toxicological investigation to establish the chronology of the injury in this violent deaths.

Keywords: forensic autopsy, ethanol level, sequestered hematoma, subdural hematoma, intracerebral hematoma

FORENSIC AGE ESTIMATION - AN EXPERTISE STILL NEEDED IN ROMANIA OF THE 21ST CENTURY

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Background: The anthropological expertise in order to establish the age and gender of a person is requested in civil cases such as late birth registration and is carried out according to the recommendations of the German Study Group, which provides a methodology that includes 3 examinations, as follows: physical examination and anthropometric measurements for the estimation of physical growth and gender, odontological examination to estimate dental age, and radiological examination to assess bone age. **Material and methods:** In 2023, within the Institute of Forensic Medicine Târgu Mureş, 3 anthropological expertises were carried out to determine the age and gender. **Results:** The persons examined were two males and one female, the established ages being 23, 26 and 59 years. None of them appeared in the records of a Neonatology clinic. **Conclusions:** Literature data show that forensic age determination is currently performed mostly in particular situations such as refugees with lost IDs or in third world countries, where many births take place in rural areas without supervision of a trained obstetrician. In Romania, 293 expertises were carried out between 2017 and 2019, so where do we stand from this point of view?

Keywords: forensic, age estimation, anthropology

GENETICS

IMPROVING THE ACUTE MYELOID LEUKEMIA GENOME INVESTIGATION BY NEXT GENERATION SEQUENCING

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Background: We conducted this study to identify the best genetic testing approaches for acute myeloid leukemia (AML) patients and to compare the utility of next-generation sequencing (NGS) technique on AML management. All of these in order to find the patient susceptibilities, prognosis, and the available personalized treatment. **Material and methods:** Multiple studies were performed, part of our results being published before. We enrolled 420 AML patients, and they were investigated by cytogenetics, MLPA technique, LD-RT PCR, NGS sequencing, fragment analysis, capillary sequencing and PCR based techniques. **Results:** Without NGS sequencing we identified genetic anomalies by specific PCR techniques, and we identified mutations on 56% of the patients. By adding NGS analysis the percentage of identified mutations increased to 94%. CNVs and/or fusion genes were identified on were found on 66% of patients. **Conclusions:** By adding NGS analysis to AML genome investigation the clinical management of AML patients is significantly improved, and the patients are more confidently grouped in the prognosis scores. This work was supported, in part, by a grant from the Romanian Ministry of Education and Research, CNCS—UEFISCDI, project number PN-III-P4-ID-PCE-2020-1928, within the PNCDI III, contract no. PCE 72/2021.

Keywords: leukemia, mutations, gene, somatic, NGS

GENETIC INVESTIGATION A USEFUL TOOL FOR RISK STRATIFICATION OF ACUTE MYELOID LEUKEMIA

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Background: Acute myeloid leukemia (AML) is a heterogeneous and aggressive malignant disease. It is characterised by the proliferation and abnormal differentiation of immature clonal myeloid cells and short survival (<20% of AML cases survive 5years). The prognosis of AML is poor in most of the cases and is influenced by specific genetic features such as chromosomal andmolecular abnormalities. **Material and methods:** Recently, new updated classification systems of myeloid malignancy were releasedrevealing the heterogeneity and genomic complexity within AML and proving that comprehensive genomic assessment is essentialfor the correct classification and prognosis of AML patients. By using NGS methods at least 1 somatic anomaly was identified inmore than 95% of AML cases, with about an average of 3 driver mutations in each AML case. **Results:** More than a quarter ofAML patients present FLT3, NPM1 and *DNMT3A* mutations. Moreover, the prognostic of an AML patient is derived from thepresence or absence of a specific mutation that can be modified by the presence of co-mutations (*NPM1* with *FLT3*-ITD or *DNMT3A* gene mutations). The European Leukemia Net (ELN) 2022 risk stratification system integrates both cytogeneticaberrations and gene mutations. A new group of MDS/AML has been added (cases with 10-19% blasts). ICC 2022 no longerconsiders therapy-related AML and AML following MDS, myeloproliferative neoplasms (MPNs) or MDS/MPN as distinct diseasesubgroups. **Conclusions:** ELN, WHO, and ICC 2022 emphasize the integration of cytogenetic and molecular parameters toprovide an evidence-based classification of AML in order to facilitate precision diagnosis and prognostication and improvetreatment. The new risk stratification systems are important tools and redefine a better genomic profile of AML cases.Acknowledgements This work was supported by a grant from the Romanian Ministry of Education and Research, CNCS—UEFISCDI, project number PN-III-P4-ID-PCE-2020-1928, within the PNCDI III, contract no. PCE 72/2021.

Keywords: acute myeloid leukemia, risk stratification, gene mutation

A RARE CASE WITH CHRONIC MYOPATHY IN COURSE OF ETIOLOGICAL CLASSIFICATION

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Background: Chronic myopathies are rare diseases with an early onset under 6 months with severe hypotonia, with a variable clinical picture without having a very clear differentiation in the absence of genetic tests, histochemical methods and muscle biopsy. However, in recent years, mutations of the same genes have been described that can determine a great diversity of clinical and histopathological phenotypes, as well as the same phenotype due to mutations at the level of a variety of genes. The evolution and the prognosis can only be specified after establishing a diagnosis of certainty. **Material and methods:** We present a case of a 3-year-old boy with a complex phenotype of myopathy, referred to the Genetics service with the suspicion of OsteogenesisImperfecta, a suspicion supported by a double fracture of the distal of the left femur. The neurological evaluation highlights aclinical picture with proximal and axial muscle damage, supported by myopatic discharges on EMG examination, with minimalcontractures on the Achilles tendon and the deep flexors of the fingers bilaterally, with a myopathic facies features, with normalvalues ⌧⌧of muscle enzymes, without a history of neonatal hypoxic ischemic encephalopathy, apparently without brain damage. Theclinical picture is being framed. **Results:** In the clinical picture, there are elements that can fit the phenotype into the group ofcongenital myopathies, but the presence of contractures and amyotrophies also indicate the suspicion of congenital dystrophies,such as Bethlem Myopathy, or laminopathies such as Emery Dreifuss. For the moment, neurotrophic support treatment as well askinetophysiotherapy are the only ones that can be applied. **Conclusions:** Completing the investigations through cardiological,ophthalmological evaluation and especially genetic testing with gene panels associated with different forms of myopathies, areessential both for the diagnostic framework, as well as for genetic advice and prognosis.

Keywords: myopathy, genetic tests, neurology, congenital, collaboration

GENETIC TESTING IN ADULTS WITH NEUROLOGICAL DISEASES – SOMETIMES A NECESSITY?

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Background: Development and epileptic encephalopathies (DEEs) include a group of rare diseases with onset in early childhood characterized by malformations and developmental disorders of the central nervous system, recurrent seizures, developmental slowing, intellectual disability. The etiology of DEEs is varied, including both hereditary and genetic causes as well as acquired causes such as metabolic abnormalities or brain injuries caused by various factors. **Material and methods:** We report a case with milder facial dysmorphism but with early onset epilepsy and cerebellar dysgenesis, with developmental impairment and cognitive disorder that become more obvious with age. The evolution and clinical characteristics of our case outlines a phenotype that apparently does not fit into any previously known disease and this is the main reason that we looked for genetic counselling. **Results:** Our case fits into the characteristic phenotypic traits for the p.Glu209Lys PACS2 gene mutation with epileptic seizures with early onset in the neonatal period or in the first months of life, intellectual deficit, cerebellar dysgenesis, a tendency to social isolation, minimal linguistic baggage and disorders of the autistic spectrum. **Conclusions:** The presence of the clinical picture in conjunction with the characteristic phenotype together with the corresponding imaging changes represent a red flag that should promptly direct the neurologist towards a genetician specialist to obtain a correct diagnosis. This work was supported by the internal research grant of UMFST George Emil Palade Targu Mures, Grant number 163/8/10.01.2023

Keywords: development and epileptic encephalopathies, PACS2 gene, epilepsy, p.Glu209Lys PACS2 gene mutation, cerebellar dysgenesis

GENETIC FACTORS WITH PROGNOSTIC IMPLICATIONS IN THE CONTEXT OF CHRONIC LYMPHOCYTIC LEUKEMIA.

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Background: Chronic Lymphocytic Leukemia (CLL) is the most prevalent leukemia among adults, constituting 25% of adult leukemia cases. This heterogeneous condition is characterized by genetic abnormalities, including chromosomal aberrations such as copy number variations (CNVs), gene mutations, mutational status of the *IGHV* gene, and single nucleotide polymorphisms (SNPs), all of which hold considerable prognostic significance. Our study sought to comprehensively investigate the genetic landscape of CLL patients and elucidate the diverse spectrum of genetic anomalies. **Material and methods:** We investigated a cohort of 125 CLL patients, involving the use of MLPA (Multiplex ligation-dependent probe amplification) to detect CNVs and mutations in genes like *NOTCH1*, *SF3B1*, and *MYD88*. We also examined the mutational status of the *IGHV* gene and conducted SNP analysis for cytocine *IL-10* (rs1800896, rs1800872) and *TNF* (rs361525, rs1800750), with 239 healthy controls included for comparison. **Results:** Findings revealed that 39% of patients exhibited CNVs, 13.6% had gene mutations, and 9.3% presented the co-occurrence of gene mutations and CNVs. Concerning mutational status, 68.8% had unmutated *IGHV* (*U-IGHV*), while 31.2% had mutated *IGHV* (*M-IGHV*). SNP analysis showed variant alleles in 64.8% of patients for rs1800896, 48.8% for rs1800872, 3.2% for rs361525, and 0.8% for rs1800750. All 125 patients displayed genetic alterations, with 95.2% presenting multiple genetic risk factors. Survival was significantly influenced by age at diagnosis over 65 years ($p=0.01$) and by the association of *U-IGHV* with CNVs and/or gene mutations ($p<0.001$). Various individual risk factors were identified, including WBC count >11000 cells/µl, LYMPH >40%, somatic mutations, and CNVs ($p<0.05$). Additionally, we identified frequent co-occurance of gene mutations and rs1800872, as well as CNVs with rs1800896 and *U-IGHV* with rs1800896 and CNVs, all acting as combined risk factors for CLL.Acknowledgements: PN-III-P4-ID-PCE-2020-1928 **Conclusions:** The simultaneous presence of multiple genetic risk factors is common, and significantly impacts the prognosis of CLL.

Keywords: CLL, MLPA, IGHV, CNV, SNP

KIDNEY INVOLVEMENT IN CHILDREN WITH TUBEROUS SCLEROSIS

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Background: Tuberous sclerosis (TSC), a rare genetic disease, is characterized by a multisystem involvement, with an increasing incidence. **Material and methods:** Our current study's objective was to provide a detailed description of renal involvement's prevalence and consequences in TSC patients. Also, he diagnosis and therapeutic algorithm for renal lesions we are using in our hospital is discussed. **Results:** The age at which TSC symptoms develop varies, as does the degree of systemic involvement and severity. The clinical characteristics of TSC can also change throughout the course of a person's lifetime. About 60-80% of people with TSC experience kidney problems, represented by: angiomyolipomas (80%), multiple cysts (45%), and solid tumors (3-4%). Kidney involvement may be manifested as Hemorrhage (Hematuria, intratumoral, retroperitoneal), mass effect (abdominal/flank mass, pain, tenderness), arterial hypertension, chronic kidney disease, and anemia. Close and regular monitoring for renal functions, hypertension, and imagistic appearance, is necessary in all cases. The prognosis is dependent by lesion size, lesion burden, risk of bleeding and effect on kidney function. mTORi therapy is the advised first line of treatment for asymptomatic, developing angiomyolipoma greater than 3 cm in diameter. Kidney-sparing resection or selective embolization are acceptable procedures. **Conclusions:** For the early identification of TSC, abdominal US of the kidneys and liver should be done before the detection of brain lesions. This is especially important for pediatric patients with convulsions, spasms, mental retardation, face angiofibroma, or skin discoloration, as well as epilepsy with an unclear clinical explanation.

Keywords: kidney, angyomyolipoma, Tuberous Sclerosis, hematuria

GENETIC DIAGNOSIS OF NEURODEVELOPMENTAL DISORDERS USING MLPA ANALYSIS: TARGU MURES' EXPERIENCE

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Background: Our study aimed to identify genetic mutations such as Copy Number Variations (CNVs) in children with intellectual disability (ID), global developmental delay (GDD) and multiple congenital anomalies (MCA) and to establish a genetic testing protocol for these patients. **Material and methods:** We present the study of the Laboratory of Medical Genetics from Targu Mures, Romania, which includes 232 pediatric patients referred for genetic evaluation and testing between 2015 and 2023 with ID, GDD and MCA. Multiplex Ligation-dependent Probe Amplification (MLPA) analysis was performed for genetic testing using a combination of SALSA MLPA kits designed for ID and GDD associated with MCA, in accordance with the manufacturer's protocol (MRC Holland®) and confirmation of the detected mutations. **Results:** A detection rate of 15% for CNVs was attained among 232 cases presenting with ID, GDD and MCA. Among the microdeletion and microduplication syndromes identified in our study, we include Phelan-McDermid syndrome, 10q26 microdeletion syndrome, Miller-Dieker syndrome, Smith-Magenis syndrome, Koolen-de Vries syndrome, 18q23 deletion syndrome, Emanuel syndrome, and microduplication syndromes involving chromosomal regions 1p36, 3q29, 9p24.3, 15q11q13 and 21q22.3. **Conclusions:** Our findings indicate that a combination of MLPA kits could be applied as first-tier genetic testing for detecting CNVs in children with neurodevelopmental disorders associated with congenital anomalies when advanced molecular analyses are unavailable.Acknowledgements: Detection of copy number variations located at 3p26.3, 8p23.1 and 9p24 by Real-Time PCR method in children with intellectual disability, contract 615/6/17.01.2019, CIGCS project, UMFST GE Palade of Târgu Mureş. National Program of Health of Women and Children VI.2. Women's Health Subprogram 3. Prevention of Genetic Diseases by Pre- and Postnatal Diagnosis.

Keywords: MLPA analysis, CNV, intellectual disability, developmental delay, congenital anomalies

HEMATOLOGY

OVERALL AND PROGRESSION-FREE SURVIVAL STUDY IN A COHORT OF CHRONIC LYMPHOCYTIC LEUKEMIA PATIENTS

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Background: In patients with chronic lymphocytic leukemia (CLL), there are known prognostic and/or predictive factors, but in real life, in smaller cohorts of patients, many other factors may have some additional prognostic significance. **Material and methods:** Calitative, retrospective cohort study, 80 patients (66%men, median age 70.5 years, Binet stages at diagnosis 49%-A, 31%-B and 20%-C) diagnosed, followed and treated with CLL in our department between 2013-2022. We performed a univariate Kaplan-Meyer survival study (overall survival-OS and progression-free survival-PFS) not only for classic prognostic factors (stage, anemia, trombocytopenia, TP53 positivity, IgHV status) but also for other clinical and laboratory parameters. **Results:** Median OS was 48.5 months (2-119 months) and PFS was 25.5 months (1-123 months). Classical prognostic factors revealed expected strong potential; other factors related to the particular composition of the studied cohort (autoimmune hemolysis, hypogammaglobulinemia, excessive > 200,000/microl lymphocytosis, significant complications at initial presentation) showed an impact on OS and PFS in the univariable survival study. In the period of the COVID-19 pandemic, the annual mortality rate was significantly higher(5x) in CLL patients due to severe COVID-19 disease, but also due to complications occurring long- COVID disease or thereafter. **Conclusions:** In the studied cohort of CLL patients, not only classical prognostic factors, but also some other particular clinical and laboratory factors have shown their influence on OS and PFS.

Keywords: Chronic lymphocytic leukemia, Overall survival, Progression-free survival

SURVIVAL IN PATIENTS WITH MYEODISPLASTIC NEOPLASMS

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Background: Myelodisplastic Neoplasms (MDS) are clonal diseases of the bone marrow, characterized by morphologic dysplasia, cytopenia and a variable risk to transform to acute myeloid leukemia (AML). It is seen mostly in elderly individuals. **Material and methods:** We performed an observational study on a case series of 60 patients, diagnosed and treated with MDS in Department of Hematology from Internal Medicine Clinic 1, in Targu Mures Clinical County Emergency Hospital between November 2011 and March 2023. We studied overall survival, type of treatment, transformation in AML and survival according to different factors, including R-IPSS (revised international prognostic scoring system). **Results:** Sex distribution was 43.33% men and 56.67% women. Patient distribution by number of cytopenias was 36.6% with 1 cytopenia, 35% with 2 cytopenias and 28.3% with 3 cytopenias. Although patients were distributed in all 5 categories, most of the patients were with low risk MDS by R-IPSS (35%). Median overall survival for all the patients was 26 months. The survival was shorter for patients with 3 cytopenias (13 months), compared to patients with 1 cytopenia (64 months) and patients with 2 cytopenias (25 months). Our study confirmed the predictive value of R-IPSS for patients survival. Survival was longer in patients with lower risk scores. Treatment influenced survival but the results were difficult to interpret as guidelines recommend treatment based on R-IPSS. **Conclusions:** We concluded that age, sex, number of cytopenias and R-IPSS accurately predict survival in MDS patients.

Keywords: myelodisplastic sydrome, survival, cytopenias

HYGIENE

THE IMPORTANCE OF TEACHING ABOUT THE HEALTH EFFECTS OF CLIMATE CHANGE

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Background: There is an increasing need to integrate knowledge about the health effects of climate change into medical training. The Standing Committee of European Doctors urged EU decision-makers to include training on the impact of climate change on health for health professionals. The teaching of health knowledge related to climate change effects should be part of the training of health professionals and should be introduced in the curriculum of medical schools. **Material and methods:** CLIMATEMED is an Erasmus project that improves the curriculum and expands knowledge about the health effects of climate change at medical universities. The World Café method, based on round-table discussions, was applied to assess the needs, summarize the proposals, and develop the necessary strategy. At the same time, a questionnaire was applied to those who chose this subject as an optional course. The participants who expressed their opinions were medical students from UMFST Târgu Mureş. **Results:** The opinions of students show the importance of information related to climate change, the understanding of diseases caused directly or indirectly by climate change. Interviewees reported what kind of topics should be included in a new course, in which semester/module and in what format it would be appropriate to teach it. The most frequently reported topics were: heat-related illnesses, extreme weather, vector-borne diseases, food safety, air pollution, and mental health. According to the goals of the project and students' opinions, since 2023 medical students can choose Climate Change and Health Effects as an elective course. **Conclusions:** There is a growing demand from medical students to include in the curriculum knowledge related to the health effects of climate change. The CLIMATEMED project can facilitate this integration, can develop methodological guidelines for university teachers, and contributes to the preparation of educational materials and the introduction of an optional discipline in the curriculum of students, Faculty of Medicine, UMFST Târgu Mureş.

Keywords: climate change, health effects, medical universities, opinions, optional course

ASPECTS REGARDING DIETARY HABITS AND BODY MASS INDEX IN A GROUP OFHIGH SCHOOL STUDENTS FROM TÂRGU MUREȘ

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Background: Unhealthy eating habits during adolescence constitute a risk factor for the development of overweight and obesityand can affect health. Objective: To study the frequency of having a body mass index above the normal range among students who consume fast food, with the aim of outlining preventive measures to reduce the risks associated with this habit. **Material and methods:** In the year 2022, a questionnaire composed of 25 questions was administered during homeroom hours to high school students from three classes, distributed across four high schools in Târgu Mureș. The questionnaire focused on detailing the consumption of fast food, its relevance to the etiopathogenesis of overweight and obesity in adolescents, as well as lifestyle aspects. **Results:** The analysis results showed that out of the sample of 273 surveyed students, 17.07% were overweight and obese, while 82.93% had a normal weight. Within the sample, fast-food consumers accounted for 77.55%, while those who did not consume fast food accounted for 22.45%. Among those who consumed fast food, the overweight and obese individuals made up 18.95%, compared to 9.67% for those who did not consume fast food. Additionally, fast-food consumers skipped breakfast at a rate of 67.51%, and 93.32% did not consume fruits and vegetables daily. **Conclusions:** The occurrence of overweight and obesity appears to be more common among those who consume fast food, including sweets and carbonated beverages. Fast-food consumption can be associated with very low, or even zero, intake of raw vegetables and fresh fruits in certain age groups, which could lead to a deficiency in certain vitamins and minerals. The implementation of health education classes in schools is essential to reduce these risks.

Keywords: obesity, fast food, unhealthy eating

ANTIMICROBIAL RESISTANCE IN THE CONTEXT OF CLIMATE CHANGE – A WORRYING HIDDEN GLOBAL HEALTH PROBLEM

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Background: Two interconnected public health concerns, antimicrobial resistance and climate change, are among the world's most serious health emergencies. In this study we summarized the most recent research on the connection between antimicrobial resistance and climate change. **Material and methods:** A literature search for the articles was conducted using the following keywords: "climate change", "antimicrobial resistance" and "infectious diseases" on PubMed and Google Scholar search engines with a timeframe from 2018 to 2023. **Results:** As a consequence of their correlation with faster bacterial growth rates and increased horizontal gene transfer, rising temperatures, in fact, are strongly related to antimicrobial resistance. Moreover, the emergence of new and re-emerging infections with pathogens that may carry novel resistance mechanisms, such as Plasmodium falciparum and Candida auris, may also be caused by the climate crisis. Contamination of floodwater with nitrogen fertilizers is known to enhance antibiotic resistance. Extreme flooding brought on by climate change is expected to increase antibiotic resistance. As precipitation becomes more severe, runoff will also rise, which will eventually result in greater pollution levels in the water, which can facilitate the development of antibiotic-resistance genes. The increasing amount of microplastics, heavy metals and biocides in water and soil sources, may also lead to antibiotic resistance triggered by co-resistance mechanisms. Overtreatment of livestock with antibiotics due to heat stress is the most common reason given for the misuse of antibiotics resulting in the spread of antibiotic resistance. By 2050, agriculture will use up the worldwide carbon budget required to keep global temperature increases under 2 °C, which can further worsen the problem. **Conclusions:** There are complex commonalities between antibiotic resistance and climate change, including the fact that both are global public health problems, which represent an imminent danger and both require public involvement for progress to be made.

Keywords: climate change, antimicrobial resistance, infectious diseases, global warming

MIGRATION CAUSED BY CLIMATE CHANGE AND ITS CONSEQUENCES

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Background: Migration caused by climate change is expected to increase substantially by 2050, raising concerns about the state of global peace. **Material and methods:** We carried out a general review of literature to describe migration in relation to climate change, its risk factors and environmental impact. **Results:** Large-scale human migration, due to resource scarcity, has increased the frequency of extreme weather events and other factors, especially in developing countries in the low latidinal band of the earth. The tertiary impacts of climate change affect livelihoods and poverty: heat can have major effects on working capacity, especially in agriculture.Other occupational health risks associated with climate change include increased risk of malaria and dengue fever in field workers, as well as risks of injury and mortality from extreme weather events and flooding. The social, economic and environmental factors underlying migration decisions are complex and varied, making it difficult to observe or estimate the magnitude of climate change effects. Populations living in the arctic or tropical regions, and on small-island developing states face the greatest threat of displacement. Based on the 20°C of global warming scenario, these populations may be required to move at greater distances than 1000 km with evacuation from these areas to tropical margins and the subtropics increasing population density in these destinations by 300%. The regional impacts emcompass decreased crop productivity adversely affecting national, regional, and household livelihoods and food security. There are changes in the geographic range and incidence of vector- and water-borne diseases for african continent.Heatwaves, water stress, desertification, flooding, and sea level rise are environmental stressors that increase morbidity, mortality, and poor mental health in Sub-Saharan Africa. **Conclusions:** Strategies to address climate migrants are needed to control the migration crisis. As the crisis intensifies, our response to it will define international relations in the 21st century.

Keywords: climate change, migration, environment, tertiary impacts

ASSESSING THE NECESSITY OF INTEGRATING

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Background: Climate change, with its profound global impacts, significantly affects various aspects of health. The contemporary medical curriculum must be responsive and dynamic to incorporate these evolving challenges. An assessment was undertaken to discern the viewpoints of medical students and student nurses on the integration of "Climate Change and Health Effects " into the medical curriculum with a particular focus on the CLIMATEMED project. **Material and methods:** To investigate the necessity and urgency of incorporating climate change and its health impacts into medical education, and to gather insights and opinions on how this integration should be approached to maximize relevance and effectiveness. An anonymous questionnaire consisting of ten diverse questions was administered to medical students and student nurses. A total of 351 questionnaires were completed, providing a comprehensive perspective on the participants' views regarding the proposed curricular integration. **Results:** The majority of participants affirmed the importance of including climate change-related health challenges in medical education. 74.8% of respondents reported minimal emphasis on climate change aspects in courses. There was a consensus on the need for this inclusion early in the medical education journey, emphasizing its relevance in future medical practices. 72.6% favored teaching climate change in the first year, with 66.9% preferring the first semester in a course format. Participants attributed the main causes of climate change to pollution (air, water, soil) and acknowledged its role in increasing morbidity and the emergence of new pathologies. **Conclusions:** The findings underscore the critical need for medical curricula to evolve by integrating "Climate Change and Health Effects" to prepare future physicians adequately for emerging health challenges. The CLIMATEMED project, through its innovative approach and emphasis on climate change, stands as a pivotal initiative in enhancing the educational landscape of medical universities, preparing medical professionals who are adept at navigating the complexities of climate change and its impacts on health.

Keywords: Medical Education, Climate Change, Health Impacts, Curriculum Development, Student Perspectives

GLUTEN- FREE DIET- TRENDS AND NECESSITIES IN THE 21TH CENTURY

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Background: Gluten is the name given to proteins found in wheat. There are some medical issues linked to it, but also a lot of myths among the population, many choose to eat gluten- free, even if they don't have any proven medical indication. **Material and methods:** In 2022 I performed an online questionnaire in a group organized around this topic. The questions were about epidemiological aspects and medical condition of the participants. **Results:** Results: there were 510 participants, most of them women from urban areas (895, reps. 77%). Age of participants was from 18 to over 60 years. Only 74% of them begun GFD with medical recomandation, 72% had evidence for condition that imposed GFD. Positive diagnose was gluten sensititive enteropathy in 57%, wheat allergy in 32% and " others" in 11%. Only 64% had symptoms if eating gluten. 57% had psihological difficulties in accepting the necessity of GFD. Regarding family and friends reactions, 8 % of respondents encountered lack of validations of real medical issue from the family and friends. **Conclusions:** Conclusions: GFD should be followed only if there is a medical condition that makes it necessary. People who are eating GF because they think it is healthy should be informed that GFD isn't healthier than a normal diet, it can even harm. There is a lot if misinformation about GFD, health education in this topic is needed for patients and general population also.

Keywords: gluten free diet, gluten sensitive enteropathy, wheat allergy

INFECTIOUS DISEASES

HYDATID CYST IN AN HIV POSITIVE PATIENT

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Background: Echinococcosis is a parasitic disease associated with the development of cysts in the brain, liver, lung, and other organs, which can be more severe, with rapid progression and larger cysts in HIV positive patients, than in non-HIV population. The management of the disease requires multidisciplinary approach. **Material and methods:** We present the case of an HIV positive patient classified in stage C2, on antiretroviral therapy with bictegravir, tenofovir alafenamide and emtricitabine, with the last T CD4+ lymphocyte count of 297 cells⁄mm3, undetectable viral load, who presented at the emergency department due to epigastric pain and vomiting. The peripheral smear showed 60% eosinophils, abdominal ultrasound and CT scan described a hydatid cyst of 100x74 mm diameter on the left liver lobe. **Results:** Anti echinococcus IgG antibodies were positive, the patient underwent Albendazole therapy and surgery, Lagrot type chistectomy and perichistectomy were performed. An external biliary fistula appeared after the intervention, biliary MRI scan was performed, which showed the dilation of intrahepatic and common bile ducts. The patient underwent endoscopic retrograde cholangiopancreatography, obstruction by hyaline membranes was diagnosed and resolved. During this period the patient developed cholangitis with Pseudomonas aeruginosa, treated with antibiotics. Eventually the outcome was favorable, the patient recovered completely. **Conclusions:** Although a rare condition, hydatid cyst can be associated with HIV, and can be complicated, however, complete recovery can be obtained with correct management.

Keywords: echinococcosis, cholangitis, antiretroviral

A MULTIDISCIPLINARY APPROACH TO THE TREATMENT OF SEVERE SOFT TISSUE RELATED SEPSIS

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Background: Severe skin or soft tissue infections are potentially devastating conditions due to major tissue destruction. It is often associated with systemic toxicity, sepsis and high mortality. Early antibacterial treatment, surgical debridement and intensive care monitorization are essential for improved survival. **Material and methods:** local cold therapy. After 48 hours she presented to the emergency department for intense local pain, swelling and sero-sanguinolent discharge. Orthopedic assessment excluded an acute lower limb fracture. The patient was admitted to the 1st Infectious Disease Clinic, but on combined antibiotic, anti-inflammatory and anticoagulant therapy the outcome was unfavorable. CT scan revealed diffuse swelling of right thigh and calves, retro- and suprapatellar fluid collection. On the 3rd day of hospitalization, the skin lesion expanded, she was transferred to Surgical Department for debridement and fasciotomy. Bacterial wound cultures isolated Streptococcus pyogenes, Pseudomonas putida and Enterobacter cloacae. In the intensive care unit on continuous monitorization developed signs of multiple organ failure (elevated serum bilirubin, creatinine and transaminase), iatrogenic pneumothorax. After broad-spectrum antibiotic therapy, under water sealed chest drainage and hemofiltration, the clinical and paraclinical findings improved. **Results:** We established the final diagnosis of pluribacterial traumatic wound related sepsis, complicated with iatrogenic pneumothorax. Intraoperative cultures isolated Stenotrophomonas maltophilia and Myroides spp. The patient recovered and was discharged after 26 days of hospitalization. **Conclusions:** A multidisciplinary team required in order to optimize critical care for patients with severe soft tissue infection.

Keywords: traumatic wound, streptococcus pyogenes, surgery, sepsis

ACUTE NEUROLOGICAL MANIFESTATION IN HIV INFECTED PATIENT

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Background: Stroke risk factors may vary according to the patient's age, clinical characteristics and comorbidities. In persons living with HIV detectable viremia, immunosuppression, combined antiretroviral therapy (cART) confers an additional risk of stroke. **Material and methods:** We present a case of a 37-year-old male patient, in past medical history with HIV infection AIDS stage, hyperlipidemia, diabetes mellitus, atrial fibrillation, chronic pulmonary disease, arterial hypertension. He was admitted to the 1st Infectious Disease Clinic for fever, chills, cough, diarrhea, asthenic syndrome. At home on antibiotic treatment the outcome was unfavorable, at the emergency department laboratory test relieved important inflammatory syndrome (CRP: 200mg/L, leucocyte: 15200/mmc), imagistic findings described pulmonary consolidation. On admission stable cardiac and respiratory status, without neurological signs or symptoms. On the 7th day of hospitalization, Clostridioides difficile toxin test was positive. On specific treatment diarrheal and respiratory symptoms were ameliorated. After two weeks of hospitalization, he developed dizziness, balance disorders, nystagmus, vomiting, dysphagia, dysarthria, facial paresthesia, severe asthenic syndrome. CT angiography of the cerebral arteries described acute ischemic vascular lesion at the right cerebral hemisphere and left occipital level. The patient was transferred to the Neurological Clinic for treatment. **Results:** We established the final diagnosis of acute ischemic stroke with cerebellar syndrome, bacterial pneumonia and C. difficile enterocolitis in HIV infected patient with metabolic syndrome and multiple cardiovascular risk factors. After 7 days of neurological care our patient outcome was favorable, without neurological residual deficits or sequalae. **Conclusions:** The occurrence of stroke in HIV infected patients might be coincidental. However, HIV infection might be considered as a risk factor cause directly or indirectly acute neurological manifestation especially in vulnerable patients with multiple comorbidities.

Keywords: HIV infection, metabolic syndrome, neurological manifestation, stroke

INTERNAL MEDICINE

PROPERTIES OF MALIGNANT TUMORS OF THE DIGESTIVE SYSTEM AMONG PATIENS OF 1ST MEDICAL CLINIC OF TÂRGU MUREŞ

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Background: The malignant tumors of the digestive system are a heterogeneous group of diseases with different symptomatology. Their incidence is increasing. Their importance consists in the fact that they represents the 3.rd most frequent cause of death worldwide.The aim of this paper is to study the incidence, precancerosus state, symptomatology, localization, diagnostic methods, complications, prognostic factors and monitoring of these patients. **Material and methods:** We made a retrospective study among 200 patients with the diagnosis of malignant tumors of the digestive system hospitalized between 2020 January-2022 September at the 1.st Medical Clinic of SCJU Tg-Mureş. We studied the patients age, sex, provenance, localization, precancerosus state, complications, stage, clinical and paraclinical results, prognostic factors. **Results:** The studied population 60% were male, 40% were female. The more affected age group was between 70-79 ages.The proportion rural:urban was 3:2. The most frequent tumor between these patients was the colon cancer. The patients mostly were in bad general condition, they needed hospitalization for the complications of the tumor: infections, deep vein thrombosis, sever anemia symptoms, sever dyselectrolytemia, hypoproteinaemia, metastasis. 35% of the patients needed erythrocyte concentrates or fresh frozen plasma. We could identify a lot of malignant tumors with precancerous state in the history of the disease: hepatic cirrhosis -carcinoma, biliary lithiasis-tumor, gastric ulcer-tumor, colon polyp- cancer. **Conclusions:** It is very important the monitoring of the precancerous state, the early diagnosis of malignant tumors of the digestive system with adequate methods.

Keywords: malignant tumor, digestive system, monitoring, precancerous state, tumor markers

NEUROLOGY

OCRELIZUMAB TREATMENT SIGNIFICANTLY DECREASED SERUM LEVELS OF NEUROFILAMENT LIGHT CHAIN AFTER THE FIRST COMPLETE CYCLE IN MULTIPLE SCLEROSIS PATIENTS

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Background: Multiple sclerosis (MS) is an immune-mediated chronic inflammatory and neurodegenerative disorder affecting the central nervous system. Ocrelizumab (OCR), a highly effective disease-modifying therapy (DMT), is a humanised anti-CD20 monoclonal antibody approved for the treatment of relapsing-remitting MS (RRMS) and primary progressive MS (PPMS). Neurofilament light chain (NfL) is a biomarker of neuroaxonal injury that can be used to monitor disease activity and treatment response in patients with MS (PwMS). **Material and methods:** We performed a prospective study, enrolling 23 RRMS and PPMS patients and 23 healthy controls (HCs). We assessed serum NfL levels (NfLs) before initiating OCR treatment and after 6 months for PwMS and at the start of the study for HCs. **Results:** PwMS exhibited significantly higher NfLs, both at the beginning and end of the study, compared to HCs. OCR treatment significantly reduced NfLs after 6 months from initiation for the entire PwMS group. When PwMS were categorized into subgroups based on age, sex, clinical form of the disease, previous DMT usage, disability progression, relapse history for the previous year, a significant decrease in NfLs was observed in both clinical forms of MS. Notably, this reduction was particularly significant in patients over 40 years of age, female patients, treatment-naive patients and those who experienced relapses in the previous year. **Conclusions:** OCR significantly decreases NfLs, especially in treatment-naive patients with prior clinical signs of disease activity. This suggests that the treatment reduces neuroaxonal injury even after the first complete cycle. Acknowledgment: This presentation was supported by the internal grant research, Grant of the University of Medicine and Pharmacy, Science and Technology George Emil Palade Targu Mures, Grant Number 510/9/17.01.2022

Keywords: Multiple sclerosis, Ocrelizumab, Neurofilament light chain

PSYCHIATRIC COMORBIDITIES IN MYASTHENIA GRAVIS- A SINGLE-CENTER EXPERIENCE

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Background: While there has been extensive research on myasthenia gravis (MG) and the associated psychosocial factors, clinical attention to these factors remains insufficient. MG can lead to manifestations like ptosis, diplopia, dysarthria, dysphagia, and respiratory failure, affecting the bulbar, ocular, and respiratory muscles. Despite nearly a century of advancements in treating the physical symptoms of MG, our understanding of the intricate relationship between MG and the psychological disorders that frequently co-occur with it remains limited. The objective of our study is to investigate the frequency, causes, and characteristics of psychiatric comorbidities in MG patients. **Material and methods:** We retrospectively analyzed the clinical and paraclinical data from 163 consecutive patients with myasthenia gravis. **Results:** We found diagnosed psychiatric comorbidities in 66 patients (5 psychosis, 63 anxiety, and 50 depression). The presence of psychiatric comorbidities was significantly higher in patients under 65 years of age (p=0.027), those with multiple referrals to the clinic (p=0.0002), and those who experienced multiple MG exacerbations (p=0.0006). The severity of the disease significantly increased the association with psychiatric disorders, being more common in patients belonging to a higher Osserman class (p=0.024). Patients receiving steroid treatment had a significantly higher frequency of psychiatric comorbidities (p=0.028), and patients with psychiatric comorbidities were significantly more likely to be controlled with higher doses of acetylcholinesterase inhibitors (p=0.011). **Conclusions:** The authors emphasize the significance of conducting screenings for anxiety and depression in individuals diagnosed with autoimmune myasthenia gravis. Furthermore, the authors reiterate the importance of keeping in mind the potential psychiatric side effects, such as insomnia, depression, anxiety, and psychosis, that can arise from the frequent utilization of corticosteroid therapy in the treatment of myasthenia gravis. This work was supported by the internal research grant of UMFST George Emil Palade Targu Mures, Grant number 163/8/10.01.2023

Keywords: myasthenia gravis, anxiety, depression, psychosis, psychiatric comorbidities

THE ROLE OF BRAIN-DERIVED NEUROTROPHIC FACTOR IN INTERFERON BETA-TREATED MULTIPLE SCLEROSIS PATIENTS

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Background: Introduction. Multiple sclerosis (MS) is an immune-mediated central nervous system (CNS) disorder characterized by demyelination and subsequent axonal loss, and it stands as a significant contributor to non-traumatic neurological disability in young adults. Among the environmental factors potentially contributing to the development of MS, the alteration of the gut-brain axis has gained interest. This pathway connecting the gut to the brain through the vagus nerve is sensitive to brain-derived neurotrophic factor (BDNF), a key promoter of neuronal and hippocampal plasticity. **Material and methods:** Materials and Methods: We conducted an observational, non-interventional study involving 80 MS patients: 60 relapsing-remitting MS (RRMS) - out of which 20 RR naïve to treatment, 20 with benign evolution and 20 secondary-progressive MS. We also included 20 age-and sex-matched with naïve MS healthy controls (HC). Our assessments included measuring serum BDNF levels using the ELISA method and analyzing a panel of Th17 cytokines with Flexmap. **Results:** Results: We observed that BDNF serum levels were notably higher in benign and naïve MS patients compared to those with SPMS (p=0.01, p=0.04; Kruskall-Wallis non-parametric test with Dunn-Bonferroni correction). However, we did not find significant differences among the other MS phenotypes. Notably, in naïve MS patients, we discovered a positive correlation between BDNF and IL-10 (r=0.7, p=0.04; Spearman's rho with Holm correction). **Conclusions:** Conclusion: Elevated levels of BDNF are associated with a milder progression of the disease. Acknowledgement: This work was supported by a grant from the Ministry of Research, Innovation and Digitization, CNCS - UEFISCDI, Romania, Project number PN-III-P1-1.1-PD-2021-0547, PD 80/Apr. 2022, within PNCDI III.

Keywords: Multiple Sclerosis, Gut-brain Axis, Vagus Nerve, Brain Derived Neurotrophic Factor

EXPLORING CYTOKINE PROFILE IN AMYOTROPHIC LATERAL SCLEROSIS: INSIGHTS INTO IMMUNE RESPONSE AND DISEASE SEVERITY

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Background: Amyotrophic lateral sclerosis (ALS) is a complex and multifactorial neurodegenerative disease, and the roles of the various immune responses, including the interplay between Th1 and Th2 phenotypes are still being studied. The immune system's involvement in ALS is not fully elucidated, and the relative contributions of different immune cell subsets to the disease's pathogenesis and how it affects disease progression is still not well-defined being a subject of ongoing research. **Material and methods:** We determined the serum level of 15 cytokines (IL-17F, GM-CSF, IFN-gamma, IL-10, IL-12p70, IL-13, IL-1beta, IL-33, IL-2, IL-4, IL -5, IL-6, IL-17E/IL-25, IL-31, TNF-) in 45 ALS patients, as well in control cases, using Luminex ® xMAP technology. **Results:** We identified a positive correlation between ALS Functional Rating Scale-Revised (ALSFRS-R) and IL-5 (r=0.42, p=0.0008), a positive correlation between ALSFRS-R in upper limb function and IL-5 (r=-0.07, p=0.56), along with a positive correlation between ALSFRS-R- in respiratory function and IL-5 (r=0.30, p=0.02). We found significant results in the correlation between the progression rate of ALSFRS-R (ΔPR) and IL-5 (r =-0.26, p=0.005), between the survival from disease onset and IL-12p/70 (r=0.27, p=0.04), of the survival from disease diagnosis and IL-12p/70 (r=0.32, p=0.01) and TNF-alpha (r=0.29, p= 0.03), as well as of the patient's age with IL-17F (r=0.38, p=0.002), IL-33 (r=0.39, p=0.002), IL-31 (r=0.33, p=0.01) and IL-17E/IL-25 (r=0.41, p=0.001). **Conclusions:** Our research into the roles of different cytokines in ALS progression and disease severity is another investigation and new insights may emerge that clarify the exact impact of immune response on disease phenotype and progression rate."This work was supported by a grant of the Ministry of Research, Innovation and Digitization, CNCS - UEFISCDI, project number PN-III-P1-1.1-TE-2021-0960, within PNCDI III".

Keywords: amyotrophic lateral sclerosis, neurodegeneration, cytokine, disease progression, immune response

EMG, SOMETIMES A CLUE FOR AN UNEXPECTED DISEASE

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Background: Despite the modern epidemiological approach and understanding in the transmission and effective antibiotic treatment for sexually-transmitted diseases, syphilis continues to exert a high burden on the medical system worldwide. Treponema pallidum, the causative agent for the syphilis infection is a gram-negative spirochetal bacterium. The nervous system is one of the more commonly affected organ systems apart from the classical dermatological and genital features of the disease and is perhaps responsible for the highest long-term morbidity and burden both in the adult and the neonate population. **Material and methods:** We hereby present the case of a 24-year-old woman with subliminal intellectual performance since childhood, known with Little disease, with an insidious gradual accentuation of the motor deficit especially in the lower limbs followed by subsequent progressive weakness in the upper limbs. The onset disease had a prolonged progression, within 5 years. **Results:** Electromyography revealed a radicular extensive sufferance in the cervical and lumbar myotomes with chronic neurogenic occurrence at needle examination but without changes at nerve conduction studies. The patient underwent subsequent serological testing and both TPLA and Rapid plasma Reagin reaction revealed as positive. The cerebrospinal fluid was also subsequently tested for TPLA and Rapid plasma Reagin reactions with positive results. **Conclusions:** The neurological burden of syphilis, classically defined as neurosyphilis can be classified according to the time of onset in early neurosyphilis with acute meningitis and features of cerebral vasculitis and late neurosyphilis within decades of the bacterial infections with features of dementia, tabes dorsalis, and paresis. Although radicular involvement is a less frequently reported aspect of neurosyphilis, the EMG examination drew attention to a possible infectious etiology after ruling out other causes and proved it usefulness in directing subsequent investigations. This work was supported by the internal research grant of UMFST George Emil Palade Targu Mures, Grant number 163/8/10.01.2023

Keywords: syphilis, neurosyphilis, EMG, polyradiculopathy, TPLA

THERAPEUTIC PLASMA EXCHANGE IN NEUROLOGICAL DISEASES

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Background: Centrifugal apheresis separates the cellular components of the blood from the plasma based on their specific gravity or density. Clotting factor IV is represented by calcium ions that play an important role in intrinsic, extrinsic and common pathways of coagularion cascade. Citrate anticoagulation produces a reversible chelation of calcium ions in the extracorporeal circuit that prevents thrombosis. The calcium concentration of the blood in the extracorporeal circuit that is readministered through the outlet line to the patient is restored by administering a calcium solution. The replacement fluid used is carefully selected to maintain the oncotic pressure and consists in a mixture of fresh frozen plasma and albumin solution 5%. **Material and methods:** Therapeutic plasma exchange is an extracorporeal treatment used in many neurological diseases according to ASFA guidelines, especially in immune mediated and inflammatory neurological disorders. The feasible method allows neurologists to learn and apply it which facilitates the access of neurological patients to this treatment. Spectra Optia System uses an apheresis method that allows blood drainage both through a central venous approach and through a peripheral venous approach if the patients present well-developed veins. **Results:** Thus, the 1-st Neurology Clinic from the County Emergency Hospital Targu Mures represents a Romanian premiere in which neurologists trained in this method have performed over 250 procedures since 2019. The most important side effects consist in: hypocalcemia with digital or facial paresthesia, contractures, chills, hyperventilation, nausea and vomiting, hypotension, allergic reactions to plasma, hemolysis, peripheral or central venous thrombosis, local infections. **Conclusions:** Therapeutic apheresis plays an important role in the quick resolution of autoimmune diseases and the ability of neurologists to perform these procedures reduces the burden on already overcrowded intensive care clinics. This work was supported by the internal research grant of UMFST George Emil Palade Targu Mures, Grant number 163/8/10.01.2023

Keywords: Spectra Optia Apheresis System, Therapeutic plasma exchange, ASFA guidelines, fresh frozen plasma, albumin solution 5%

OBSTETRICS AND GYNECOLOGY

LABIAL ADHESION CAUSING URINARY DISTURBANCES IN A 13 YEARS OF AGE GIRL. A CASE REPORT

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Background: Labial adhesion is a fusion of labia minora in the midline. It may be caused by infections, inflammation, local trauma, lack of sexual activity, estrogen deficiency. **Material and methods:** We present a case of a 13-year-old girl which was admitted in Obstetrics and Gynecology No.2 Clinic of Târgu Mureş for hypogastric pain,difficult urination after a trauma in the vulvar area 2 years ago (she was hit with a boot by a colleague). At genital examination we noted a labial fusion. **Results:** The patient underwent surgical separation of labial adhesion under general anaesthesia. Labial fusion was lysed by incision in the midline and 3 interrupted stitches using 3-0 gauge delayed- absorbable suture were placed on the labia minora to prevent recurrence. A Foley probe was placed within the bladder for 24 hours. **Conclusions:** Surgical treatment was necessary in this case. Conservative local treatment with topical estrogen cream would not have solved this case. The recurrence wasn't noted after 6 weeks and 6 months follow-up.

Keywords: labial adhesion, urinary complaints, surgical treatment

30 YEARS SURVIVAL AFTER TREATMENT FOR STAGE III B OVARIAN CANCER. A CASE PRESENTATION

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Background: Ovarian cancer is the leading cause of death by malignant tumors of the female genital tract.The symptoms of ovarian cancer are nonspecific, so 70% of the patients are diagnosed in advanced stage (III-IV), when 5-years survival rates are modest despite the treatment applied.I present the case of a patient with IIIB ovarian cancer treated in Obstetrics and Gynecology Clinic no.2, Târgu Mureş which survives without signs of relapse **Material and methods:** Patient DM, 24 years old was admitted in our Clinic, in March 1993 for abdominal pain and menstrual disorders. At pelvic examination was found bilateral ovarian tumors. The value of serum CA125 was 230 U/mL. The patient had total hysterctomy, bilateral adnexectomy, omentectomy and large peritonectomy for stage IIIB ovarian cancer diagnosed intraoperatively. The histologic diagnosis was of papillary serous cystadenocarcinoma and metastasis below 2 cm were found within omentum. The patient had 5 courses of combined chemotherapy with platinum, adriamycin and cyclophosphamide and 2 immunotherapy courses with Decaris. After the treatment the patient was monitored by serum CA125 determinations. **Results:** After treatment the values of CA125 levels decreased under 35 U/mL. In October 2023 the patient had pelvic, US, MRI examinations and she hadn't signs of relapse. **Conclusions:** The absence of metastasis in pelvic and para-aortic lymph nodes, the low grade of ovarian papillary serous carcinoma, the age of the patient can explain her 30 years survival without recurrence.

Keywords: ovarian cancer, CA125, survival

OCCUPATIONAL HEALTH

ASPECTS REGARDING FAMILY DOCTORS IN MURES COUNTY

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Background: Family medicine is a clinical medical specialization, oriented towards primary health care, having the role of ensuring the first contact with the medical system, both of the individual of the family, and of the community. The family doctor has a professional responsability towards the community, promoting disease prevention and health. In order to ensure the quality of the medical act, a minimum number of 800 persons and a maximum number of 2200 insured persons per family doctor were established. **Material and methods:** The aim of this study was to compare, in evolutin, the data of the numbers, age, distribution in rural-urban areas of family doctors in Mures County with those collected in january 2020. The data used in this study was collected in january 2023 and provided by the Targu Mures Public Health Directorate, Excel was used to centralize the data. **Results:** In January 2020, 299 family doctors were registered in Mures County, aged between 30 and 73 years, 81.9% being female (decreasing 79.8% in 2023) and 18.1% male (currently incresing 20.14%), the total number decresing (283 doctors). Regarding the distribution of the place of activity, 46.8% are found in rural areas, currently 4% less than 2020. Currently, a family doctor in the urban area has 1.84 pacients, stationary compared to 2020, but in the rural area 2.4 patients (17.1% more) At the beginning of 2020, out of the total number of family doctors registered in Mures County, 3.34% were over 67 years old, currently 16.6% have retirement age, but decided to extend their activity. **Conclusions:** In Mures County, the number of family doctors is predominantly female, it is decreasing although demographic evolution is increasing and the retirement age is increasing.

Keywords: follow up, family medicine, primary medical healthcare

ORTHOPEDICS

COMPARATIVE ANALYSIS OF ACCELERATED VERSUS NON-ACCELERATED REHABILITATION POST-ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION

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Background: The rehabilitation protocol subsequent to anterior cruciate ligament (ACL) reconstruction critically impacts patient outcomes. Although numerous research studies have attempted to define optimal post-operative protocols, consensus remains to be established.This investigation searches to discern between the efficacies of accelerated and non-accelerated rehabilitation regimens following ACL reconstruction, with a particular emphasis on patient-reported outcome measures (PROMs). **Material and methods:** Eighteen patients, aged 19-37 years, with ACL injuries underwent ACL reconstruction using the semitendinosus-gracilis autograft technique at the Orthopedic Clinic of Mures County Hospital from June 2022 to May 2023. Patients were subsequently randomized to undergo either accelerated rehabilitation (n=9) or non-accelerated rehabilitation (n=9). Parameters of assessment at baseline and 12 months post-operatively included anterior-posterior knee laxity, valgus-varus movement, general clinical condition, functional performance, and Oxford Knee Score (OKS) as a PROM. **Results:** At the 12-month mark, anterior knee laxity showed no significant differences from immediate post-operative measurements between the two groups. Functional assessments were comparable in both cohorts. OKS reflected similar findings: accelerated rehabilitation patients averaged an OKS of 42.2 ± 3.1, while non-accelerated rehabilitation patients reported an average OKS of 41.6 ± 2.8 (p=0.07). Both groups reported similar levels of satisfaction and perceived functional performance. **Conclusions:** ACL reconstructions utilizing semitendinos-gracilis autografts followed by either accelerated or non-accelerated rehabilitation demonstrate comparable outcomes concerning knee laxity and patient-reported measures. OKS, further substantiated the clinical and functional outcomes, reinforcing the equivalency of both rehabilitation approaches.

Keywords: Accelerated rehabilitation, Non-accelerated rehabilitation, Anterior cruciate ligament reconstruction, Semitendinosus-gracilis autograft

TOTAL KNEE ARTHROPLASTIES FOLLOWING SPECIFIC MENISCAL LESIONS: INJURY MORPHOLOGY ASSESSMENT

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Background: Arthroscopic meniscectomy (AM) remains the gold standard for treating symptomatic meniscal lesions. Recent literature suggests potential degenerative changes post-AM, potentially altering the native biomechanics of the knee. The main objective of this research was to elucidate the incidence of total knee arthroplasty (TKA) in patients with knee osteoarthritis (OA) post-meniscal injury, highlighting the influence of the injury specifics. **Material and methods:** A retrospective review of the Orthopedic Clinic of Clinical County Hospital of Mures database identified patients, aged 35-78, with diagnosed meniscus tears from 2018-2022. These patients underwent a 4-year follow-up. Subgroups were delineated based on meniscal injury location (medial, lateral, or both) and tear morphology (bucket handle, complex, or peripheral). Incidence rates of TKA were statistically compared amongst these subgroups. **Results:** Of the 243 patients (mean age: 55.4 ± 9.4 years) stratified by injury location, theTKA rate was 5.76% (medial), 4.52% (lateral), and 7.4% (both medial and lateral) within the 4-year window. Bivariate analysisrevealed that patients with combined tears exhibited a 1.61-fold higher likelihood of TKA. When categorized by lesion type in acohort of 164 patients (mean age: 52.3 ± 9.4 years), the TKA rate was 4.8% (bucket handle), 6.0% (complex), and 4.2%(peripheral). Complex tear patients showed a 1.25-fold increased probability of undergoing TKA compared to the bucket handlegroup. **Conclusions:** In a cohort of meniscal injury patients, simultaneous medial and lateral tears elevated the 4-year TKA risk.These findings underscore the significance of the lesion type and location in forecasting knee OA progression and subsequent TKA.Such insights could refine prognostic evaluations and therapeutic decisions for meniscus injury patients.

Keywords: Meniscal lesions, Total knee arthroplasty, Knee osteoarthritis, meniscectomy

BIOCOMPATIBILITY ASSESSMENT OF OSTEOBLASTS ON SUBSTRATES: INSIGHTS INTO CELL MORPHOLOGY, VIABILITY, AND CRIOPRESERVATION

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Background: Osteoblasts play a pivotal role in bone formation and remodeling. Understanding their interaction with different substrates is crucial for developing novel materials in orthopedic and dental implants. Traditional methods of assessing biocompatibility have been marred by a lack of standardization, especially concerning osteoblast deposition on varying substrates. Moreover, the long-term preservation of osteoblasts without compromising their viability remains an area of interest for researchers. Our objective was to investigate the morphological characteristics of osteoblasts relative to their distribution on substrate surface areas, and to assess the impact of prolonged cryopreservation on osteoblast viability and differentiation potential. **Material and methods:** Osteoblasts were isolated from bone remnants obtained from patients following total hip arthroplasty. These cells were deposited on tissue culture polystyrene and incubated for 14 days. Cell morphology was examined, particularly when deposited in significant numbers. Additionally, osteoblasts were cryopreserved at -20°C, later shifted to -80°C, and assessed for viability post-preservation of up to 750 days. **Results:** Osteoblasts displayed an elongated cytoplasm when deposited in large numbers. Cryopreservation for up to 750 days showed no significant impact on the differentiation potential of osteoblasts ($p=0.12$), indicating that long-term storage under optimal conditions does not affect their viability. **Conclusions:** A nuanced understanding of osteoblast morphology in relation to their numbers on substrates aids in biocompatibility assessments. Furthermore, cryopreservation techniques provide promising avenues for long-term osteoblast storage without compromising their functionality. The findings hold potential implications for future biocompatibility research and the establishment of standardized protocols

Keywords: Osteoblasts, Biocompatibility, Cryopreservation

BILATERAL AVASCULAR NECROSIS OF THE HIP IN POST-PANDEMIC ERA: POTENTIAL LINKS TO COVID-19 AND ITS TREATMENT IMPLICATIONS

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Background: An unexpected surge of young patients presenting with bilateral avascular necrosis of the femoral head (AVN) has been observed. It is suspected to be associated with factors such as corticotherapy, potential vaccine-related issues, or other post-COVID19 disease-related aspects. **Material and methods:** Between December 2020-June 2023 data were collected from a single center specialized in knee and hip arthroplasty at the Department of Orthopedics and Traumatology of Clinical County Hospital of Mures. The inclusion criteria included patients from our outpatient clinic visits with a positive history of COVID-19 and AVN. Patients with known risk factors such as alcohol dependence, smoking, and prior use of systemic steroids were excluded. **Results:** The sample patients were 63% females (n=43) with an age mean range of 63.3±22.1 years. Every individual in this group had at least one documented instance of a positive COVID-19 test. The average duration between a positive COVID-19 diagnosis and onset of AVN symptoms was 7.2±11.2 months. These symptoms predominantly consisted of pain originating in the gluteal region, radiating to the inguinal region, which remained unresponsive to both oral and local NSAIDS. 55% (n=37) of the patients, classified as Steinberg AVN grade IV or higher, were suitable candidates for surgical interventions. They underwent either cemented or uncemented hip arthroplasties. Remaining subjects, graded Steinberg III or lower, were subjected to conservative treatment or drilling. **Conclusions:** These observations strongly suggest a foreseeable surge in the demand for hip replacements in the near future. Medical facilities specializing in these operations may need to prepare for this influx. Financial implications of this trend necessitate a reassessment of procedure costs. As a call to action, prospective research is paramount to establish whether a direct correlation or causation exists between AVN and the corticotherapy used in COVID-19 treatment, even at relatively lower doses.

Keywords: Bilateral AVN, Post-pandemic, Corticotherapy, COVID-19

COMPARING OSSEOINTEGRATION AND FUNCTIONAL OUTCOMES OF BTB VERSUS HAMSTRINGS TECHNIQUES IN ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION

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Background: The stability and long-term outcomes of ligament reconstruction surgeries are significantly influenced by the degree of bony osseointegration. Both the Bone-to-Bone (BTB) and Hamstrings techniques are prevalent methods, but there's an ongoing discussion about their respective osseointegration efficiencies.Objective: This research seeks to draw a detailed comparison between the BTB and Hamstrings methods, emphasizing the extent and quality of osseointegration following the procedure. **Material and methods:** Individuals who underwent ligament reconstruction were classified into two groups: the BTB cohort and the Hamstrings cohort. To assess bony osseointegration, X-rays were taken on the second day post-surgery and at a one-year follow-up. Further, the Knee injury and Osteoarthritis Outcome Score (KOOS) was employed to gauge functional outcomes. Specific load-bearing tests were implemented to determine graft stability and overall surgical success. **Results:** Early X-ray assessments showed a slightly quicker osseointegration rate in the BTB group within the initial post-surgical weeks. By the one-year mark, radiographic results indicated equivalent osseointegration levels in both groups. Load-bearing tests indicated a slight edge in stability for the BTB technique during early recovery phases. The KOOS scores, taken one year post-surgery, were comparable for both BTB (82.2±5.4) and Hamstrings (80.9±6.3) techniques (p=0.2234). **Conclusions:** Although the BTB method may provide quicker initial osseointegration, both techniques showcase similar levels of bony integration and functional outcomes in the long run. It is imperative for surgeons to evaluate individual patient needs and the surgical scenario when opting between both techniques.

Keywords: Osseointegration, Bone-to-Bone, Hamstring technique, PROMs

COMPARATIVE EFFICACY OF A NOVEL VS. STANDARD REHABILITATION PROTOCOL IN YOUNG ROMANIAN PATIENTS AFTER TOTAL KNEE REPLACEMENT

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Background: Knee replacement surgeries, while common, necessitate a comprehensive rehabilitation protocol to ensure optimal outcomes. Existing standard protocols, while effective for many, might not cater to the specific needs of younger Romanian patients who might have distinct physical activity levels and recovery expectations. This study aims to compare the efficacy of a novel rehabilitation protocol, designed in collaboration with certified physical therapists, against the standard regimen in young Romanian patients who have undergone knee replacement surgery. **Material and methods:** In a prospective study involving 24 patients, a new rehabilitation protocol was designed in collaboration with certified physical therapists. Upon presentation, patients were randomly allocated to either the standard protocol group (Standard) or the novel rehabilitation group (New). Evaluations were conducted weekly over a two-month period. Primary outcome measures included muscle strength, quadriceps circumference, and time up and go test. The Visual Analog Scale (VAS) and Oxford Knee Score were used to gauge rehabilitation outcomes. **Results:** At baseline, both groups demonstrated comparable Oxford Knee Scores (Standard: 20.5±3.2, New: 20.2±3.5) and VAS (Standard: 5.1±1.3, New: 5.2±1.2). At 4 weeks post-operation, the Oxford Knee Score showed improvement for both Standard (26.8±2.8) and New (27.5±2.6) protocols, while the VAS decreased to 3.0±0.9 and 2.8±1.0, respectively. By 8 weeks, scores further improved with Oxford Knee Scores at 32.4±2.1 for Standard and 33.0±2.0 for New, and VAS at 1.5±0.7 and 1.4±0.6, respectively. Notably, muscle strength measurements (measured in Newtons) at 8 weeks post-operation were significantly higher in the New protocol group (453±52 N) compared to the Standard group (413±46 N). **Conclusions:** While both groups showcased similar improvements in Oxford Knee Scores and VAS, patients undergoing the novel rehabilitation protocol exhibited greater muscle strength gains. This suggests that younger patients may benefit from tailored post-operative attention and rehabilitation strategies.

Keywords: Knee replacement rehabilitation, young patients TKA, Muscle strength post-surgery

PATHOPHYSIOLOGICAL INSIGHTS FROM A CASE SERIES ON RAPIDLY PROGRESSIVE OSTEOARTHRITIS OF THE HIP

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Background: Rapidly Progressive Osteoarthritis of the Hip (RPOH) is characterized by an accelerated deterioration of the hipjoint leading to loss of function and disabling pain. Current diagnostic criteria for RPOH include a loss of joint space greater than2 mm per year, or more than 50% per year, a deformed femoral head and acetabulum, and the ascension of the femoral head abovethe radiological tear drop. The aim of this study was to elucidate the clinical progression, treatment responses, and outcomes ofpatients diagnosed with RPOH. **Material and methods:** We present a case series of 13 patients diagnosed with RPOH, withfollow-ups ranging from the onset of symptoms to surgical treatment and post-operative recovery. Baseline statistics including VASscores, time-up-and-go tests, and radiographic measurements together with subjective outcome measurements were calculated. **Results:** All patients were initially treated with non-steroidal anti-inflammatory drugs, and 69% (9/13) had intra-articularcorticosteroid injections. Five patients tried hyaluronic acid injections, while all engaged in physical therapy and weightmanagement. 92% (12/13) tried nutritional supplements like glucosamine and chondroitin. Over the follow-up period, the averageVAS scores increased from 4.2±1.5 at baseline to 7.5±0.8 ($p<0.01$), indicating progressive pain. Time-up-and-go test times alsosignificantly increased from 12.8±2.3 seconds to 14.6±2.1 seconds ($p<0.05$), demonstrating decreasing mobility. WOMAC scoresrevealed worsening joint function with an average score decrease from 68.4±4.9 to 55.5±5.4 to ($p<0.01$), and the Harris Hip Scoreshowed a decline from 82.5±6.2 to 54.6±7.1 ($p<0.01$). **Conclusions:** There was a notable decline in hip joint space and aconsistent deterioration in patient outcomes over the follow-up period. Despite various conservative treatments, including non-steroidal anti-inflammatory drugs, intra-articular injections, physical therapy, and nutritional supplements, there was a significantincrease in pain levels and decrease in mobility and outcomes.

Keywords: Rapidly Progressive Osteoarthritis of the Hip, RPOH, Osteoarthritis

THE EFFECTIVENESS OF TRANEXAMIC ACID TREATMENT IN REDUCING BLOOD LOSS IN HIP ARTHROPLASTIES

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Background: Tranexamic acid, an antifibrinolytic agent, has been widely used in various medical fields, particularly in orthopedics and traumatology, to reduce bleeding and hemorrhagic complications. The objective was to evaluate the role of tranexamic acid, an antifibrinolytic agent, in orthopedic surgeries, specifically hip arthroplasties, and its potential benefits in reducing blood transfusion requirements. **Material and methods:** A retrospective, single-center study included 133 patients undergoing hip arthroplasties in our clinical departement. Patients receiving intraoperative tranexamic acid were compared to those who did not recieve. Data on blood losses, transfusions and fluid corrections were monitored. Six months postoperatively, patients were assessed using WOMAC and Harris scores. Statistical analyses were conducted using EPI INFO 5 and Graph Pad Prsim 6. **Results:** Majority of patients were females aged 50-70 years old (67.2±3.2), predominantly overweight (66%) and from rural areas. Detailed demographic analysis revealed distinct characteristic in each group. Tranexamic acid-treated patients were predominantly female, overweight and non-smokers, while non-treated groups had a higher prevalence of male and smoking patients. Tranexamic acid administration showed lower risk (OR 5.147) of requiring blood transfusion. Six months postoperatively, the tranexamic acid group demonstrated significant improvements in WOMAC scores compared to non-administrated groups. **Conclusions:** Tranexamic acid administration in total hip arthroplasties reduces postoperative bleeding, lowers the need for blood transfusion and improves patient outcomes at 6 months postoperatively. The study underscores the important of tranexamic acid in optimizing surgical outcomes and reducing complications in orthopedic procedures.

Keywords: tranexamic, transfusion, hip arthroplasty, outcomes

EVALUATING THE LATERAL APPROACH IN TOTAL HIP ARTHROPLASTY: RESULTS FROM A SINGLE-CENTER COHORT ANALYSIS

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Background: Total hip arthroplasty (THA) is a widely performed orthopedic procedure. Among the various surgical approaches, such as the anterior and posterior approach, the lateral approach to THA has gained popularity in recent years due to its potential advantages that include reduced dislocation risk. Our aim was to evaluate the clinical effectiveness, dislocation rate, and functional outcomes of the lateral approach in total hip arthroplasty in a single-center cohort over a five-year period. **Material and methods:** This study conducted a retrospective analysis of patients who underwent THA using the lateral approach at a single-center (orthopedic and traumatology clinic of Clinical County Hospital of Mures over a five-year period. We extracted and thoroughly analyzed data on patient demographics, surgical techniques, postoperative complications, early functional outcomes, and patient satisfaction. Radiographic assessments and functional outcome scores, including the Harris Hip Score, were used to evaluate postoperative results **Results:** A cohort of 2536 patients who underwent THA via the lateral approach was analyzed. The average age of patients was 64 years, with a diverse range of hip conditions. A low dislocation rate (1.8%) was observed. There was a significant improvement in the Harris Hip Score postoperatively, with an average score of 88.9 ± 5.6, indicating improved postoperative function. Radiographic analysis displayed accurate implant placement in 93% of cases. Interobserver agreement for implant placement evaluations, measured using the Cohen's Kappa, was ⍰=0.82.**Conclusions:** This single-center cohort analysis showed that the lateral approach in total hip arthroplasty yields promising results with a low dislocation rate and improved functional outcomes, as evidenced by the Harris Hip Score and early postoperative mobility. These findings suggest that the lateral approach is a viable alternative for THA, especially for patients at risk of dislocation. Further prospective studies and comparative analyses are required to confirm these results and determine its broader applicability.

Keywords: Lateral approach, total hip arthroplasty, functional outcomes, Harris Hip Score

A COMPARATIVE EVALUATION OF GENDER-BASED DIFFERENCES AND BIASES IN TOTAL KNEE REPLACEMENT OUTCOMES

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Background: Total Knee Replacement (TKR) is a well-established procedure for knee osteoarthritis. The need to understand gender disparities in TKR outcomes is imperative due to potential biases, including gender-based pain perception, anatomical differences, treatment preference biases by physicians, and potential disparities in rehabilitation recommendations. This study aimed to explore gender disparities and biases related to TKR subjective outcomes. **Material and methods:** We examined 644 TKR patients over a period of 3 years. Data comprised postoperative pain levels, complications, functional recovery, and scores from Knee Society Score (KSS), Knee Injury and Osteoarthritis Outcome Score (KOOS), Oxford knee score, and Visual Analog Scale (VAS) for pain. Subjective measures like VAS might introduce recall bias, and cultural gender norms might influence pain reporting. **Results:** Distinct gender disparities emerged. The cohort comprised 386 females and 258 males. The average age for females was 66.5±8.9 years, and for males, it was 68.9±7.1 years. Females often reported higher postoperative pain, with an average VAS score of 7±1.5 compared to males 5±1.3. They also showed slower functional recovery and had a lower average KOOS (58±12) than males (KOOS: 70±10). Females average KSS was 150±25 and Oxford knee score 35±5, while males averaged a KSS of 165±20 and Oxford score of 40±4. Females also reported more complications (OR 1.22; CI 95%). **Conclusions:** Implicit biases, such as underestimating female pain thresholds or overprescribing postoperative regimes for males, may have influenced the outcomes. These disparities in TKR, influenced by both physiological differences and systemic biases, underline the need for individualized care strategies.

Keywords: Total knee replacement, gender-based differences, postoperative pain, TKR biases

IMPROVING RECOVERY AFTER HIP REPLACEMENT: ADVANCED SUPERVISED REHABILITATION PROTOCOL

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Background: Hip arthroplasty stands as a prevalent intervention for advanced hip osteoarthritis. The impact of supervised versus unsupervised execution of exercises has been established, showcasing significant differences in outcomes. The aim of this study was assess the impact of supervised versus unsupervised exercise execution post-hip arthroplasty on early recovery and joint functionality. **Material and methods:** This retrospective, single-center study involved 122 patients undergoing total hip arthroplasty. Group division was based on adherence to the recommended recovery protocol - 44 early discharges versus 78 following the standard protocol. First group lacked supervised recovery, evaluated using Harris score, WOMAC score and Visual Analogue Scale at a 3- month postoperative follow-up. Trendelenburg sign presence was also assessed. Twenty patients were excluded due to non-attendance. **Results:** Trendelenburg sign distribution shown increased occurrences at 48% compared to the second group at 20%. At admission, the Harris scores were 50.1±7.3 for the first group and 51.2±6.2 for the second group, indicating poor outcomes for both groups. At the 3-months follow-up, the first group showed a marginal improvement with Harris scores at 54.4±6.9, while the second group displayed a more notable improvement reaching 68.3±5.3. WOMAC scores at admission were 40.3±8.2 for the first group, reflecting persistent symptoms, but showed a decrease to 38.5±7.1 at 3-months follow-up. The second group had initial WOMAC scores of 41.2±7.1, which improved to 25.6±6.1 at the 3-month mark. The Visual Analogue Scale for pain indicated higher scores for the first group at admission with 7.5±1.3, which decreased to 6.5±1.2 at 3-months, while the second group started with scores of 7.2±1.4 and decreased significantly to 4.5±1.0. **Conclusions:** Orthopedic health professionals, particularly physiotherapists, play a crucial role in postoperative care. Hospital environments provide an ideal initiation space for rehabilitation, empowering patients to actively participate in their recovery journey and fostering better financial outcomes.

Keywords: Hip arthroplasties, rehabilitation, recovery, THR outcomes

SHORT-TERM OUTCOMES OF SURGICAL AND CONSERVATIVE MANAGEMENT FOR ACUTE ACHILLES TENDON RUPTURES: A 3-MONTH ANALYSIS

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Background: Achilles tendon rupture is a relatively a common and potentially debilitating injury. Despite this, it can still be vulnerable to injury, due to trauma or overuse and tendinopathy. The most common way to diagnose these ruptures is through physical examination, which may include the Thompson test or calf-squeeze test. Imaging tests such as ultrasound or MRI may also be used to confirm the diagnosis and assess the extent of the injury. Our aim was to compare the risks of re-rupture between non-surgical and surgical treatments for ruptured Achilles tendon in accordance with international assessment guidelines. **Material and methods:** We conducted a retrospective study at the Clinical County Hospital of Mures, Department of Orthopedics and Traumatology. A number of 24 patients were evaluated, 13 males and 11 females, aged 20 to 70 (46.8±23.1), that were diagnosed with acute Achilles tendon rupture between January 2020 and September 2023. Two groups were formed: group A with non-operative treatment and plaster immobilization and group B with operative treatment. The questionnaires were realised by resident doctor at medical check-up after 3 months. **Results:** Out of 24 patients, 5 were excluded for not being able to answer the questions. A mean score of 37.9 in the patients with non-operative treatment and 43.6 in the ones with operative treatment were recorded at 3 months post-injury (p=0.022). There were no major differences regarding demographic data and distributions by gender. **Conclusions:** Our results are in similar with those reported in the literature. However, there was not a significant difference in recovery between non-operative and operative treatment in acute Achilles tendon rupture, even if surgical treatment includes higher risks of skin necrosis, or infections.

Keywords: Achilles tendon rupture, Operative treatment, Achilles tendon techniques

MANAGEMENT OF PERIPROSTHETIC JOINT INFECTIONS WITH TARGETED BIOFILM INHIBITION

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Background: One of the most significant complications of total joint arthroplasty is periprosthetic joint infection (PJI). Its frequency is 1-4% after primary total knee arthroplasties and 1-2% in primary total hip arthroplasties. It's estimated that 80% of all bacterial periprosthetic joint infections form a biofilm. Our study provides an insight into the world of modern diagnostic and treatment options examined so far in our clinic. **Material and methods:** Using the MSIS criteria, we performed a retrospective analysis on 50 patients with knee and hip prosthesis who had been diagnosed with PJI. During surgical procedures, tissue and fluid samples from the infected joint locations were taken and later subjected to a microbiological analysis. Utilizing traditional culture methods, pathogen identification was carried out, and biofilm-forming bacteria were found utilizing molecular assays, such as the polymerase chain reaction (PCR). The antibiotic resistance profiles of the isolated microorganisms were evaluated using antimicrobial susceptibility testing. **Results:** Our research found a wide variety of microorganisms in 92% of the samples. The most frequent strains were Staphylococcus aureus (45%) and Staphylococcus epidermidis (35%), however Escherichia coli (10%), Pseudomonas aeruginosa (5%), and several Streptococcus species (5%) were also found. Notably, 70% of these bacteria showed resistance to frequently administered medications. The isolated bacteria exhibited biofilm formation in 85% of the cases, which showed varied architectural features and an average thickness of up to 60 micrometers. These biofilms are probably responsible for the recurrence of chronic infections in 55% of cases, making treatment plans challenging, and making pathogen eradication difficult. **Conclusions:** Since periprosthetic infection is one of the most significant complications of total joint arthroplasty, it's essential for orthopedic surgeons to better understand the pathogenesis, diagnostic challenges, and treatment options of biofilm-related periprosthetic joint infection.

Keywords: biofilm, periprosthetic joint infection, total joint arthroplasty

CLINICAL CHARACTERISTICS OF CORTICOSTERIOD VERSUS TREATED COVID-19 INDUCED AVASCULAR NECROSIS OF THE FEMORAL HEAD

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Background: Avascular necrosis (AVN) of the femoral head is a condition characterized by the insufficient blood flow to the bone tissue in the hip joint, resulting in cell death and bone collapse. Our aim was to investigate the relationship between corticosteroid use in severe COVID-19 cases and the risk of AVN, and to evaluate the role of abnormal blood clotting, especially in cases with increased coagulability, in the development of AVN. **Material and methods:** We performed a retrospective analysis of 20 patients diagnosed with AVN after COVID-19 treated with corticosteroids. Clinical data, radiographic findings, laboratory results, and treatment outcomes were evaluated for each patient. We assessed disease progression, symptomatology, and radiographic staging according to the Steinberg classification. We compared the results with current literature of corticosteroid induced AVN. **Results:** One of the key findings was the variability in the ideal steroid dosage and duration that could trigger AVN. Our patients were treated with an average dosage of 800 mg prednisone cumulative treatment. Interestingly, in our study the development of AVN occurred rapidly, with patients exhibiting symptoms in a mean time of 50-70 days after the corticosteroid treatment for COVID-19 infection, in contrast to the existing literature where the typical debut of the symptomatology was 6-month to 1-year timeframe after corticosteroid induced AVN. **Conclusions:** Close monitoring is essential for individuals recovering from COVID-19, particularly if they have received corticosteroid treatment. Implementing MRI scans as part of the follow-up procedure when patients report hip joint discomfort can facilitate the early detection of femoral head avascular necrosis (FHAVN). This knowledge is crucial for healthcare providers to mitigate the risks associated with corticosteroid treatment and AVN in COVID-19 patients.

Keywords: AVN of the femoral head, Covid-19, corticosteroids

IMPACT OF PREOPERATIVE KINESIOTHERAPY ON POSTOPERATIVE RANGE OF MOTION AND PAIN LEVEL IN PATIENTS WHO HAVE UNDERGONE TOTAL KNEE ARTHROPLASTY

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Background: Total knee arthroplasty (TKA) is a major surgical intervention performed on patients with osteoarthritis with the aim of relieving pain that severely limits function. Although surgical techniques and postoperative care are improving, a certain number o patients will have a decreased level of satisfaction after TKA. This study assesses the influence of preoperative kinesiotherapy on motion range and pain levels in individuals undergoing total knee arthroplasty (TKA). This study was conducted using 80 patients who underwent TKA in 2022 and 2023 and quantify their outcomes using the Knee Society Score (KSS). **Material and methods:** All 80 patients who were scheduled for TKA were divided into two categories: a group of 40 were subjected to preoperative kinesiotherapy, and the other group, which did not received preoperative kinesiotherapy. All patients were examined prior to surgical intervention and at 3 months postoperative utilizing the Knee Society Score, to evaluate knee mobility and pain level. **Results:** atients who underwent preoperative kinesiotherapy demonstrated markedly improved mobility and reduced pain level compared to the control group. The KSS ratings of the targeted group averaged 85 ± 7, consistently exceeding the control group's average of 72 ± 8 at 3 months after TKA, demonstrating improved postoperative outcomes. **Conclusions:** Preoperative kinesiotherapy had a favorable effect on knee mobility and pain level in patients who underwent TKA, as the KSS score indicates and increased postoperative results in the targeted group. These findings suggested that the integration of kinesiotherapy in the preoperative preparation for TKA may enhance patients overall recovery and early social reintegration.

Keywords: total knee arthroplasty, kinesiotherapy, Knee Society Score

METALLOSIS IN TOTAL HIP REPLACEMENT USING CERAMIC FEMORAL HEADS: A THREE-YEAR CASE SERIES

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Background: Metallosis, marked by the accumulation of metallic debris in the body's soft tissues, has been recognized as a potential complication in total hip arthroplasty. Though ceramic femoral heads have been adopted to mitigate wear-related complications, sporadic instances of metallosis remain a clinical concern. To evaluate the incidence, clinical presentation, radiographic findings, and risk factors of metallosis in ceramic femoral heads over three years. **Material and methods:** This study was conducted at the Clinical County Hospital of Mureş, Department of Orthopedics and Traumatology. We retrospectively reviewed seven consecutively-presented hips diagnosed with metallosis. Clinical parameters, including stem positioning, activity levels, and body mass index, were analyzed. Radiographs consistently identified liner wear. The t-test and chi square test was employed for data analysis. **Results:** Chronic pain, with a VAS scale of 7 (SD ± 1.2), was the main clinical presentation. The mean time to revision was 18.3 years (SD ± 6.2), with an average patient age of 74 years (SD ± 11.4) at revision. All prostheses heads were 28mm, 12/14 interior cone, and made from high-performance zirconium oxide-reinforced aluminium oxide. Inefficient stem positioning (OR 3.8, 95% CI), obesity (OR 1.1, 95% CI), and high activity levels (OR 1.6, 95%) were identified as risk factors. **Conclusions:** Metallosis persists as a complication in ceramic femoral heads, with liner wear being a notable radiographic sign. This study outcomes align with prior literature, underscoring the need for accurate stem positioning and personalied patient management. Larger studies are advocated for to validate and expand upon these findings.

Keywords: metallosis, ceramic femoral heads, liner wear

ANTIBIOTIC RESISTANCE FOLLOWING PRIMARY TOTAL JOINT ARTHROPLASTY ISNOT INFLUENCED BY THE USE OF ANTIBIOTIC-LOADED BONE CEMENT

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Background: A common practice in preventing periprosthetic joint infections (PJI) is the use of antibiotic-loaded bone cement (ALBC) in primary total joint artroplasty (TJA). Despite its wide use, concerns have arisen regarding the development of antibiotic resistant infections. The aim of this study was to investigate whether the use of ALBC in TJA leads to antibiotic resistant infections of the joint. Our hypothesis was that ALBCs are safe to use and do not lead to such infections. **Material and methods:** Patients who had confirmed PJI between the years of 2016 and 2023 were included in the study. Articular liquid aspiration was used to determine the bacteria causing the infection. Patients were divided into ALBC and non-ALBC groups. Medical records were also collected, clinical, TJA related and PJI related. From the recorded antibiograms we gathered data regarding resistance to gentamicin, clindamycin and vancomycin. **Results:** 21 patients with PJI were identified, 13 in the ALBC group and 8 in the non-ALBC group. The average age for the ALBC group was 72 ± 7 years, while the comparison group had a mean age of 69 ± 10 years. The most common pathogen identified in these infections was staphylococcus epidermidis (61,9%, 13 cases). The use of ALBCs did not increase the rate of apparition of any antibiotic resistant bacteria significantly. **Conclusions:** The present study shows no increase in the risk of antibiotic resistant bacterial infections when using ALBCs during primary TJR. While our data is limited, it shows no reason to assume that the use of ALBCs leads to a higher risk of antibiotic resistant bacterial infections following TJR.

Keywords: TJR, antibiotic resistant, antibiotic loaded bone cement, staphylococcus epidermidis, periprosthetic joint infections

RADIOGRAPHIC EVALUATION OF ACETABULAR CUP ANTEVERSION: FROM TRADITIONAL TO AUTONOMOUS METHODS

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Background: Accurate assessment of the acetabular cup anteversion is crucial for the success and longevity of total hip arthroplasty (THA). While several traditional methods have been used for this purpose, the emergence of autonomous techniques presents new opportunities for improved implant positioning accuracy and reliability. The objective of this study was to compare the accuracy and reliability of a novel autonomous method with traditional techniques in measuring acetabular cup anteversion on plain anteroposterior view radiographs. **Material and methods:** A total of 168 postoperative radiographs of patients who underwent uncemented THA were analyzed. Acetabular cup anteversion was measured using three traditional methods and one autonomous area-based technique. Two independent observers, senior orthopedic surgeons with more than ten years of experience in the field of hip replacement assessed the images, and the results were compared for inter-observer reliability using kappa calculations. **Results:** The autonomous area-based method displayed a mean acetabular cup anteversion of 27.5° ± 5°. In comparison, traditional methods yielded anteversion measurements ranging from 24° to 31°. The kappa coefficient for inter-observer reliability was 0.82 for the autonomous method, indicating strong agreement, while traditional methods had kappa values between 0.65 and 0.78. Moreover, the autonomous method showed a consistent variance of less than 1° across all measurements. **Conclusions:** The autonomous area-based technique offers superior accuracy and reliability in measuring acetabular cup anteversion on plain radiographs when compared to traditional methods. The higher kappa values for the autonomous method underscore its potential as a reliable tool in postoperative THA evaluations. Clinicians should consider employing this technique to enhance the precision of acetabular component assessments.

Keywords: acetabular cup anteversion, total hip arthroplasty, radiographic evaluation, inter-observer reliability

HIPERBARIC OXYGEN THERAPY VERSUS CORE DECOMPRESSION IN AVASCULAR NECROSIS OF THE FEMORAL HEAD, A RETROSPECTIVE STUDY

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Background: Core decompression (CD) has been utilized as a joint preserving technique in pre-collapse stages of avascular necrosis (AVN) of the femoral head with very good results. A more recent addition to non-invasve treatment options is hyperbaric oxygen therapy (HBO), yielding promising results. This study aimed to compare the outcomes of CD and HBO in early stages of avascular osteonecrosis of the hip. **Material and methods:** We gathered data from patients suffering from AVN of the femoral head, confirmed through MRI imaging, who consecutively underwent CD or HBO between the dates of January 2015 and August 2023, requiring a minimum follow-up of 12 months. Harris hip score (HHS), radiographic progression and MRI imaging was used to assess the outcomes of the treatments. **Results:** A total of 58 patients (61 hips) in stage II of AVN were included in the study. 36 instances of AVN were treated with CD with the remaining 25 being treated with HBO. Average follow-up period was 26 ± 16 months. 78% of patients treated with CD and 52% of in HBO group achieved improvement according to HHS, no statistically significant difference was observed using radiographic progression, while on MRI imaging, patients who underwent CD showed lighter residual signs of AVN than those who received HBO. Eight cases progressed into higher radiological stage of AVN at the one year follow-up. **Conclusions:** While HBO shows promising results as a non-operative treatment option for AVN, in our experience CD is still a more effective joint preserving treatment option. HBO in addition to other non-operative treatments may yield better results, but further study needs to be done on the subject.

Keywords: Core decompression, hyperbaric oxygen therapy, avascular necrosis of the femoral head, MRI imaging, Steinberg classification

EFFECTS OF SMOKING ON RECOVERY TIME AND POSTOPERATIVE COMPLICATIONS FOLLOWING KNEE AND HIP ARTHROPLASTY

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Background: While smoking has been identified as a preventable cause of bone pathology, its influence on postoperative recovery after total hip arthroplasty (THA) and total knee arthroplasty (TKA) remains a subject of interest. This study aimed to prospectively evaluate the recovery and postoperative complications in smokers versus nonsmokers undergoing THA and TKA. **Material and methods:** Sixty-eight patients scheduled for TKA or THA were recruited and categorized into three groups: nonsmokers, light smokers, and heavy smokers. Recovery parameters including wound healing rate, physical activities such as stair climbing and prolonged walking, fatigue levels, and days to full recovery were assessed postoperatively. Data was collected from follow-ups and compared between the groups. **Results:** Heavy smokers exhibited a significant delay in wound healing, with a median score of 6.2 (range 5.8-6.6) compared to 5.0 (range 4.8-5.4) in nonsmokers. Moreover, heavy smokers took an average of 32 days longer to fully recover than nonsmokers. Physical activity assessment revealed that smokers faced a 15% greater difficulty in activities like stair climbing and prolonged walking. Interestingly, light smokers showed only a 5% decline in physical performance compared to nonsmokers. The fatigue score was notably higher in heavy smokers at 7.8 out of 10, versus 4.2 in nonsmokers and 4.9 in light smokers. **Conclusions:** Smoking significantly prolongs recovery time and exacerbates postoperative complications following TKA and THA, with heavy smokers being at a particularly increased risk. This study emphasizes the importance of preoperative smoking cessation to optimize postoperative outcomes. Further research is warranted to explore the long-term effects of smoking on implant longevity and function.

Keywords: Total hip arthroplasty, total knee arthroplasty, smoking, fatigue, recovery

BLOOD LOSS IN CEMENTED AND UNCEMENTED TOTAL HIP ARTHROPLASTY, A COMPARATIVE STUDY

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Background: Data on blood loss (BL) and transfusion rates depending on the fixation technique of the prosthesis is lacking in medical knowledge. In theory cemented fixation techniques should result in lower BL and a lower transfusion rate. Our aim in this study is to compare BL and transfusion rates in cemented and uncemented total hip replacement operations performed in our clinic. **Material and methods:** Our study was a retrospective one, comparing a total of 170 patients who underwent total hip replacement (THR) surgery, be it through cemented, reverse hybrid or cementless fixation technique. All of these patients underwent total hip replacement surgery during the last 6 months in our clinic. **Results:** Patients who underwent fully cemented THR encountered the lowest amount of BL (580 ± 80 ml). This was followed by reverse hybrid THR where a cemented cup was used alongside an uncemented stem with a total BL of 720 ± 90 ml with cementless THR following with a total amount of BL of 810 ± 100 ml. Differences in BL were statistically significant ($p < 0.05$) Paradoxically there was a difference in the transfusion rates among these patients. Rate of transfusion among these patients varied from a mere 2% in fully cementless THR, to 9% in fully cemented THR. **Conclusions:** Reported BL in cemented THR was lower than those reported in reverse hybrid or fully cementless THR. Despite the lower amount of total BL, the rate of transfusion was higher in these patients. We estimate that this may have been due to other factors such as age, associated illnesses, a lower total body weight and preoperative anemia.

Keywords: Blood loss, total hip replacement, cemented, cementless, transfusion

SPONTANEOUS OSTEONECROSIS OF THE KNEE FOLLOWING SARS-COV-2 CONTACT

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Background: In this article we describe 3 cases of spontaneous osteonecrosis of the knee following SARS-CoV-2 contact, occurring in patients with no prior traumatic events, who also recovered from a Covid-19 infection without hospitalization or corticosteroid treatment. The pathomechanism of COVID-19 may contribute as a favorising factor in the development of spontaneous necrosis of the knee (SONK). **Material and methods:** Three patients were observed (two female aged 64 and 55, one male, aged 46) who presented sudden knee pains with no prior traumatic history. The pain was persistent and did not let up when resting or at night. MRI scans showed diffuse bone edema in the entirety of the weight bearing surface of the medial femoral condyle, in contrast to the classic image of a more focal edema concentrated on the subchondral region of classic SONK. In all three cases a non-operative approach was used with symptomatic treatment and prohibition of weight bearing on the affected knee. **Results:** All cases were examined during a 10 week follow up, where on the MRI we saw little to no signal on the medial femoral condyle, no patient had any complaints regarding the knee during this examination. In all three cases a complete resolution of the symptoms was achieved.
Conclusions: When a patient accusing sudden knee pain with no prior trauma or any history of traumatic events to the knee, it should raise suspicion about a recent COVID-19 infection, even cases where symptoms were mild to non-existent should be taken into account. The transient nature of the symptoms in all three cases suggest caution when considering treatment options in these patients as symptom resolution can be most likely achieved without aggressive surgical treatment.

Keywords: knee pain, SARS-CoV-2, SONK, necrosis, COVID-19

EFFICACY OF TRANEXAMIC ACID IN REDUCING BLOOD LOSS AND IMPROVING RECOVERY AFTER ELECTIVE TOTAL KNEE REPLACEMENT SURGERY

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Background: Total knee arthroplasty (TKA) often comes with the challenge of managing perioperative blood loss. Recentattention has been given to the application of Tranexamic acid (TXA) to reduce blood loss and possibly diminish the dependence on blood transfusions. This retrospective study delves into the impact of TXA on blood loss and postoperative recovery among TKA patients. **Material and methods:** We retrospectively reviewed records of 63 patients who underwent unilateral cemented TKA between 2022 and 2023. The patients were divided into two cohorts: those administered with TXA and those without. Data regarding TKA Knee Society Scores (KSS), hemorrhage scores, and days to full recovery were extracted from medical records and through follow-up phone calls. **Results:** Of the 63 patients, 32 were treated with TXA and showed a pronounced decrease in blood loss, reflected in their hemorrhage scores of 2.6±0.8, as opposed to 4.4±1.3 in the 31-patient control group. The TXA cohort also registered superior TKA scores, averaging KSS 85.2±3.2, in contrast to the KSS 78.7±4.0 score of the non-TXA group. Recovery data, some of which were gathered via phone calls, indicated that TXA-treated patients averaged 29 days to full recovery, whereas the control group took 37 days. The requirement for postoperative blood transfusions was reduced by 18% in the TXA group. **Conclusions:** This retrospective assessment underscores the potential benefits of TXA in managing blood loss, lowering transfusion needs, and bolstering recovery rates after TKA. The consistency of TXA's positive outcomes, even with data acquired through phone calls, suggests its broad applicability, but larger studies are needed to establish standardized protocols.

Keywords: Tranexamic acid, total knee arthroplasty, blood loss

HAMSTRING TENDON VERSUS PATELLAR TENDON AUTOGRAFT EFFICACY IN PRIMARY ACL RECONSTRUCTION: A COMPARATIVE STUDY USING PROMS

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Background: Anterior cruciate ligament (ACL) reconstruction is a critical intervention to restore knee stability following injury. The hamstring tendon and patellar tendon are predominant choices for autografts. This prospective study directly contrasts the failure rates, KOOS scores, and Oxford Knee Scores between these two prevalent autograft options in ACL reconstruction. **Material and methods:** From 2013 to 2022, 248 patients set for primary ACL reconstruction were enrolled via phone calls: 132 receiving hamstring tendon autografts and 116 with patellar tendon autografts. Post-surgery, we systematically assessed graft integrity, knee function using KOOS and Oxford Knee Scores, and recorded days to full recovery. Factors potentially influencing outcomes, such as age, sex, surgical approach, and postoperative rehabilitation, were also considered. **Results:** The hamstring tendon group showed a mean KOOS score of 85.5±2.3 compared to 83.4±2.5 in the patellar tendon group at a 12-month follow-up. Additionally, the Oxford Knee Score averaged 40.2±1.8 for the hamstring tendon recipients, whereas it was 38.5±2.0 for the patellar tendon cohort. Both grafts displayed an approximate 3% failure rate. Nevertheless, patients with hamstring tendon autografts experienced a marginally faster recovery, averaging 210 days, compared to 230 days for those with patellar tendon grafts. Secondary factors like surgical technique and rehabilitation nuances influenced the outcomes variably. **Conclusions:** Through this analysis, we present direct data on the relative efficacies of two leading ACL graft options, as gauged by KOOS and Oxford Knee Scores. The hamstring tendon autograft recipients exhibited slightly superior outcomes and a quicker return to full function. Such insights accentuate the importance of nuanced decision-making in ACL reconstructions based on patient-specific and surgical factors.

Keywords: Hamstring autograft, patellar tendon autograft, ACL reconstruction, Oxford Knee Score, KOOS score

A LONGITUDINAL STUDY ASSESSING PATIENT SATISFACTION RATES AFTER TOTAL KNEE REPLACEMENT IN YOUNGER PATIENTS

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Background: Total knee arthroplasty (TKA) remains the gold-standard surgical intervention for debilitating knee osteoarthritis and related pathologies. Satisfaction rated differs in the recent literature. Our main objective was evaluating postoperative patient satisfaction and obtain crucial insights related to the effectiveness of this procedure . **Material and methods:** A comprehensive review of surveys and pertinent studies from the last decade was undertaken to elucidate patient satisfaction post-TKA. Within our department cohort of 221 patients, aged 40 to 92 (mean age 65), who underwent TKA from January 2022 to September 2023, was analyzed. Patients were stratified into two cohorts: Group A, achieving postoperative flexion >100°, and Group B, with postoperative flexion ≤100°. A 6-month follow-up was conducted to gauge patient-reported satisfaction metrics. Additionally, all patients exhibited a minimum increment of 10 points in the Knee Society Score (KSS). **Results:** Multiple parameters were identified influencing post-TKA satisfaction. At 6-month postoperative juncture, average pain scores showed a substantial decrease from preoperative values of 7.5 ± 1.4 to postoperative values of 2.2 ± 1.1 in Group A and from 7.8 ± 1.3 to 2.5 ± 1.2 in Group B. Group A exhibited an average time reduction from 14.6 ± 2.3 seconds preoperatively to 8.9 ± 1.8 seconds postoperatively. Group B displayed a reduction from 15.3 ± 2.1 seconds to 9.4 ± 1.9 seconds. 85% of the cohort expressed satisfaction, noting substantial pain reduction, enhanced range of motion, and regained independent ambulatory capabilities. **Conclusions:** TKA typically yields high patient satisfaction, characterized by pain alleviation, enhanced knee functionality, and improved range of motion. Satisfaction determinants encompass clinical, psychological, and sociodemographic dimensions. Ensuring accurate preoperative education, managing patient expectations, and providing comprehensive postoperative support are pivotal to optimizing satisfaction outcomes post-TKA.

Keywords: Total Knee Arthroplasty, Knee Society Score, Patient Satisfaction, Postoperative Outcomes, Range of Motion

THE IMPACT OF POSTOPERATIVE CONTINUOUS PASSIVE MOTION ON SHORT-TERM OUTCOMES IN ARTHROSCOPICALLY ASSISTED ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION WITH HAMSTRING GRAFT

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Background: Young active individuals and more likely, athletes, are prone to anterior cruciate ligament (ACL) injuries often needing surgical reconstruction. For early physical rehabilitation we introduced a continuous passive motion (CPM) device to investigate the impact on postoperatory outcomes following arthroscopically assisted ACL reconstruction for complete anterior cruciate ligament using hamstring graft. **Material and methods:** The study was conducted on 46 patients from the Orthopedic and Traumatology Clinic in Târgu Mureş who underwent arthroscopic ACL reconstruction during May 2022 to April 2023. Patients were divided into two groups: the group who recieved CPM within 48 hours along with a standard postoperative rehabilitation fora total period of 6 days postoperatively (n=23) and the control group (n=23) who received standard postoperative rehabilitation without CPM. Outcome measures pain level, range of motion (ROM) and functional assessments using the Lysholm and Tegner scores. All results were obtained at baseline, at 2 weeks, 6 weeks and 12 weeks postoperatively. **Results:** At 2 weeks postoperatively, targeted group showed higher degree of knee flexion (mean difference 12.8 degrees, $p<0.05$) and decreased pain symptomes (mean difference 2.9, $p<0.05$) in comparison to the control group. No significand differences in functional outcomes were found, usind Lyshon and Tegner scores, between the two groups after 6 and 12 weeks postoperatively. **Conclusions:** Early integration of continuous passive motion in postoperative rehabilitation protocols after arthroscopically assisted ACL reconstruction with hamstring graft leads to short-term beneficial outcomes, including improved knee flexion, reduced pain and enhanced muscle function but there are no significant differences in functional outcomes at the 12 weeks follow-up. Further researches need to be done focusing on assessing functional improvement beyond the short-term period.

Keywords: continuous passive motion, anterior cruciate ligament, postoperative rehabilitation

PATHOLOGY

THE EFFECT OF COVID-19 PANDEMIC ON DIGITAL PATHOLOGY – THE ELEPHANT IN THE ROOM? A SCIENTOMETRIC STUDY

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Background: The COVID-19 pandemic has affected all the health systems worldwide, but also it had a positive effect on some medical fields. The aim of our paper was to analyze the impact in development of digital pathology through the COVID-19 pandemic by the frequency of keywords used and map-based scientometric representation of the articles from Web of Science (WoS) database. **Material and methods:** We performed a scientometric study by directly interrogation of the Web of Science database with the interrogation query "(ALL=(digital pathology)) AND ALL=(covid 19)". The interrogation resulted in 151 articles. The results articles were analyzed by using VosViewer 1.6.17. Based on this, there were generated 7 clusters of keywords as domains of interest in research. A series of scientometric maps were generated to see the connections between keywords and research interests. **Results:** Out of 151 articles, 52 keywords which met the selected threshold were analyzed. Throughout VosViewer, the keywords were divided into 7 clusters based on the occurrences and total link strength between the keywords. Cluster 1 (n=14) reflected the integration of education and diagnostic procedures in the COVID-19 pandemic, cluster 2 (n=8) reveled the necessity of implementation of digital resources through telepathology, cluster 3 (n=8) concluded to the need of artificial intelligence in validation of whole slide images. Cluster 4 (n=6), 5 (n=6) and 6 (n=6) correlated the necessity of adaptations for the histopathological diagnosis by digital pathology and virtual microscopy. Cluster 7 (n=4) defined the necessity of digital pathology in the pandemic in correlation with the keyword "cancer". **Conclusions:** Digital Pathology, the future of pathology has taken the positive part of the COVID-19 pandemic and developed tremendously by the need of accurate diagnosis in that period. Because of this, it can be said that digital pathology is not anymore, the elephant in the room.

Keywords: digital pathology, scientometry, covid-19 pandemic

HEPATOCELLULAR CARCINOMA: A HISTOPATHOLOGICAL ASSESSMENT OF 108 CASES

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Background: Hepatocellular carcinoma (HCC) is the fifth most common malignancy worldwide and the second leading cause of cancer-related deaths. HCC constitutes more than 90% of the primary tumors of the liver. Tumor development is influenced by multiple risk factors. The significant risk factors include viral hepatitis (hepatitis B and hepatitis C), alcoholic liver disease, and non-alcoholic fatty liver disease. **Material and methods:** A retrospective analysis regarding the clinicopathological features of 108 HCCs diagnosed at the Pathology Departments from Emergency Clinical Hospital of Târgu-Mureş, Romania and Semmelweis University, Budapest, Hungary, was done. The obtained data were compared with the literature data, as a background for the PhD thesis. **Results:** From the 108 cases, 73 were males (67.59%) and 35 were females (32.41%), with a male: female ratio of 2.08:1. The age of the patients ranged from 43 to 82 years, with a median age of 66 years. The predominant histological subtype was the clear cell HCC (n=33; 30.55%) followed by trabecular HCC (n=31, 28.70%), acinar (n=16, 14.81%), chromophobe (n=11, 10.18%), steatohepatitic (n=7, 6.48%), giant cell (n=5, 4.62%) and scirrhous HCC (n=5, 4.62%). Additionally, hepatitis was associated in 30 cases (27.77%), cirrhosis was associated in 71 cases (65.74%), and steatosis in 38 cases (35.18%). **Conclusions:** HCC is still a tumor developed on the background of cirrhosis which mostly affect males over 40 years old.

Keywords: hepatocellular carcinoma, clear cell type, cirrhosis, histology

CIC- REARRANGED SARCOMA- CASE REPORT

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Background: CIC-rearranged sarcoma is a rare high-grade round cell undifferentiated sarcoma defined by CIC-related gene fusions. It is a soft tissue tumor with poor prognosis in young adults. Predominantly it is deep-seated and its primary sites are in the soft tissue of the limbs or trunk. It affects a wide range of ages, from which < 25% of cases represent the pediatric age group. **Material and methods:** We present a case of a 4-year-old girl who presented for the first time in April, 2023 with left axillary mass associated with pain, left arm paresthesis and fatigue. Imagistic investigations, left axillary ultrasound and chest computed tomography, described a 36×64×69 mm solid left axillary mass, whose aspect was suggestive of neoplasm, with inhomogeneous iodophile structure, but without infiltration of muscle or vascular structure. Laboratory analysis included complete blood count and serological tests for infections. Because the clinical and imagistic investigation rose suspicion of malignancy, biopsies were performed. **Results:** Histopathological examination shows a diffuse proliferation of small round cells with normochromic nuclei, prominent nucleoli, lightly eosinophilic cytoplasm. It was associated with elongated cellular elements, suggesting degeneration phenomena situated in slightly fibrous stroma. Geographic necrosis is present and mitotic activity is moderate. The lymphoid and mieloid origin, was excluded by the broad immunohistochemical panel. In conclusion, the histopathologic aspect and immunophenotyping (Vimentin +, Myogenin + and WT1+, Ki67 was between 60-70%) were compatible with small cell sarcoma with CIC rearrangements. According to guidelines, molecular determination for gene rearrangements was recommended to establish the precise diagnosis. **Conclusions:** The particular importance of this case is represented by the CIC rearranged sarcoma that is associated with more aggressive course than Ewing sarcomas, and underlines the necessity for further advances in molecular testing.

Keywords: CIC-rearranged sarcoma, round cell tumor, molecular testing, prognosis

HISTOPATHOLOGICAL ASPECTS IN CONVENTIONAL AND RARE SUBTYPES OF UTERINE LEIOMYOMAS - CASE SERIES

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Background: Leiomyomas are the most common benign uterine tumors, arising from smooth muscle tissue, typically in women of reproductive age. Their growth is favored by hormonal imbalances, estrogenic or progesteronic therapy, and pregnancy. **Material and methods:** We present a series of seven cases of patients aged between 35 and 58 years old, clinically diagnosed with uterine fibroids, presenting with pelvic pain syndrome and uterine bleeding. **Results:** Macroscopically, the tumors were singular, or multiple, with a nodular or lobulated appearance, well-defined, firm to the touch, and had a whitish-gray color, along with a fasciculated pattern. Microscopically, conventional leiomyoma was characterized by a proliferation of elongated smooth muscle fibers, arranged in bundles, with indistinct cellular limits, eosinophilic cytoplasm, and elongated nuclei with rounded margins, without atypia. In leiomyomas with mitotic activity, over 5 typical mitoses were identified per 10 high-power fields (HPF). Leiomyomas with bizarre nuclei were characterized by the presence of cells with unusual appearances, including some multinucleated cells. Lipoleiomyoma exhibited a proliferation of mature adipose cells, while dissecting leiomyomas displayed numerous lobules that dissected through the myometrium. Regarding epithelioid leiomyomas, they were characterized by smooth muscle fibers with a round or polygonal shape, with eosinophilic, granular cytoplasm, and centrally located rounded nuclei. **Conclusions:** Most leiomyomas are asymptomatic, and their treatment is recommended in cases of fertility impairment or rapid significant growth within a short time interval. Treatment options include myomectomy or hysterectomy for large or multiple tumors.

Keywords: leiomyoma, lipoleiomyoma, dissecting leiomyoma, histopathology

THE EXPRESSION OF TYPE 3 DEIODINASE IN PRIMARY BRAIN TUMORS - A LITERATURE REVIEW

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Background: Type 3 deiodinase (DIO3) is the physiological inactivator of T4, which produces reverse T3 (rT3) by catalyzing the deiodination of the hormones inner ring. The accumulation of rT3 results in a condition called consumptive hypothyroidism. It is believed that primary brain tumors are capable of expressing high levels of this enzyme thus causing not only therapy resistant endocrinopathies but influencing the tumor phenotype. **Material and methods:** We collected studies written on the subject in electronic databases: PubMed (www.ncbi.nlm.nih.gov./entrez/query.fcgi), ScienceDirect (www.sciencedirect.com), Scirus (www.scirus.com/srsapp), ISI Web of Knowledge (http://www.isiwebofknowledge.com), Google Scholar (http://scholar.google.com) excluding articles that investigated other types of primary tumors or had inconclusive results. After selecting the articles that fit into our criteria we were left with 6 studies all published between 2000-2020. **Results:** DIO3 activity has been reported to be higher in a number of other primary tumors but its expression in central nervous system (CNS) malignancies is not a widely explored subject. Five studies have stated the fact that DIO3 activity is disturbed in brain tumors causing a high level of rT3 and low levels of the active T3 hormone. The most common types of nepoplasms that showed increased expression of DIO3 were gliosarcomas (8/8) and glioblastomas (9/10) followed by a smaller number of oligodendrogliomas, astrocytomas and pituitary adenomas. Only one study described decreased DIO3 activity in type II and type III astrocytomas. A total of 10 cases of consumptive hypothyroidism have been published so far, none of which have been caused by a primary brain tumor. **Conclusions:** The expression of type 3 deiodinase in primary brain tumors is not an extensively researched topic. All articles described an increased expression of DIO3 in CNS malignancies, especially in gliosarcomas and glioblastomas.

Keywords: Deiodinase, Tumor, CNS

GASTROINTESTINAL STROMAL TUMOR: AN UNUSUAL CASE WITH LYMPH NODES AND EPIPLOIC METASTASES

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Background: Gastrointestinal stromal tumors (GISTs) are the most common mesenchymal neoplasms of the gastrointestinal tract, with potentially high grade malignancy and unpredictable evolution. The majority of GISTs present asymptomatically and are therefore identified incidentally. The most common locations of these tumors are the stomach and small intestine. In extremely rare cases lymph node metastases might be observed. **Material and methods:** We examined a gastrectomy specimen of a 46-year-old male patient diagnosed with a subdiaphragmatic tumor with direct invasion of the gastric wall which was postoperatively seen on imaging investigation. **Results:** Histopathological examination of the resected stomach suggested a tumor of mesenchymal origin. It consisted of proliferation of spindle cells, surrounded at the periphery by a thick connective capsule. Myxoid degeneration and small foci of necrosis were also seen. The tumour cells showed marked pleomorphism and numerous atypical mitoses. The tumor metastasizes to 2 of 3 lymph nodes and two epiploic implants were also observed. Tumor cells displayed positivity for CD117, DOG1 and CD34 and were negative for smooth muscle actin (SMA), SOX-10, HMB-45, CD20, CD3, S100. Ki67 proliferation index was approximately 30-40%. **Conclusions:** Although GIST is mainly a low grade tumor, multidisciplinary decision is necessary in the aggresive types. Reassessment of the patient is necessary after treatment, to check the recurrency and metastases.

Keywords: GIST, Metastasis, CD117, DOG1, CD34

MYXOINFLAMMATORY FIBROBLASTIC SARCOMA

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Background: Myxoinflammatory fibroblastic sarcoma is a rare, low-grade tumor of soft tissues that shows an equivalent predilection for both sexes and occurs at an average age of 45 years. Localization is prevalent in acral areas. **Material and methods:** A 63-year-old male patient was hospitalized in the Surgery Clinic I of the Emergency County Hospital of Targu-Mures, Romania for surgical excision of a tumor of the posterior thorax, with slowly growth in the last weeks. The well defined encapsulated tumor was send for histopathological examination. **Results:** The examined tumor showed a myxoid appearance on the cut section, without hemorrhages or necroses. The microscopic examination revealed a rich fibro-myxoid stroma that embedded numerous inflammatory elements, predominantly eosinophilic. The mesenchymal tumor cells proved to be large, with fusiform shape. Eosinophilic cytoplasm and large nuclei with rounded ends were also noticed. Immunohistochemical exam revealed intense positivity for CD10 and vimentin. Bizarre-looking cells were also marked by CD68. The Ki-67 index was <20%. Leukocyte common antigen (LCA) marked the inflammatory elements only. No positivity was found for Cytokeratin AE1/AE3, smooth muscle actin (SMA), CD34, CD3, CD20, CD30, CD117, ALK-1 and S-100 Protein. No recurrences were seen at 5 months after diagnosis. **Conclusions:** Several immunostains are needed to identify the unusual myxoinflammatory fibroblastic sarcoma that is a low grade tumor for which follow-up only is necessary.

Keywords: Myxoid sarcoma,, inflammatory stroma,, eosinophils.

THE AUTOPSY REPORT: A HISTOMORPHOMETRIC PORTRAIT OF A STILLBORN

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Background: Autopsies of stillborn fetuses, along with the histopathological placental examination, are of outmost importance when determining the cause of death. Unfortunately, the autopsy reports are not always easily comprehensible to the patients and no conclusion is usually being offered by their clinician. **Material and methods:** We performed a detailed retrospective review of 28 autopsy reports of intrauterine deaths in the second and third trimesters between January 2021 and October 2023. Our aim was to evaluate risk factors, placental and pathologic determinants of stillbirths. Data were collected from the Pathology Department of Emergency County Hospital Targu-Mures, Romania. **Results:** 20% of women having a stillbirth were underaged (<18 years of age), 39.30% of them were multiparous and 60.7% of them came from the rural areas. The macroscopic portrait of the stillborn was of female sex predominance (67.85%), weighing 1000-1999 g (39.2%) with visible signs of maceration (64.29%). Microscopically, pulmonary atelectasis was noted in all cases, with cerebral oedema and autolyzed organs being described in 25%, respectively 32.14% of cases. Maturity of placental parenchyma was in accordance with the gestational age in 64.28% of cases. Histopathological signs of involutive fetal vascular malperfusions were present in 21.42% of autopsy reports, while signs of maternal vascular malperfusions were described in 17.85% of them. Placental infarction was noted in 14.28% of all the autopsy reports. **Conclusions:** In our case series, consistent with the literature, stillbirth is associated with older, multiparous patients, affecting more frequently the female fetuses. To conclude, fetal autopsy and the placental evaluation are valuable source of information in the study of antepartum fetal death.

Keywords: stillbirth, placenta, autopsy

ONCOCYTOMA, CHROMOPHOBE RENAL CELL CARCINOMA, AND OTHER ONCOCYTIC TUMORS OF THE KIDNEY: BRIDGING THE SPECTRUM OF RENAL ONCOCYTIC NEOPLASMS

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Background: Renal neoplasms with oncocytic cells include well-known entities such as renal oncocytoma (RO) and chromophobe renal cell carcinoma (ChRCC), but there are cases whose accurate diagnosis can be a considerable challenge. The WHO 2022 classification encompassed a distinct category that stands for a diverse range of tumors with oncocytic/eosinophilic morphology that cannot be definitively categorized as either RO or ChRCC. **Material and methods:** We present the diagnostic criteria, immunohistochemical profile and differential diagnosis of renal oncocytic neoplasms. **Results:** Oncocytoma is a benign tumor with a solid-nested arhitecture with round oncocytic cells, while ChRCC is a malignant tumor with various architectural patterns, composed of pale cells with prominent cell membrane, cells with granular oxyphilic cytoplasm, and wrinkled nuclei. It is essential to distinguish the latter from oncocytoma, as the prognosis and treatment differ significantly. Besides cell morphology, which can be similar and misleading, immunohistochemistry is often the key factor for the differentiation between them. Usually, ChRCC exhibits positive staining for c-kit (CD117) and cytokeratin 7 (CK7), whereas oncocytoma tends to be positive for c-kit but shows either negative or focal positivity for CK7. The recently introduced category of "other oncocytic kidney tumors" includes low-grade oncocytic tumors (LOT) and high-grade oncocytic tumors (HOT). These tumors share similarities with ChRCC and RO in their appearance, but they exhibit clear distinctions in terms of histology, immunohistochemistry, and molecular characteristics. HOT is characterized by a solid proliferation of cells with vacuolated cytoplasm and focal positivity for CK7, whereas LOT is characterized by a tumoral proliferation with minimal nuclear pleomorphism and intense, diffuse positivity for CK7 and negativity for c-kit. **Conclusions:** In recent years, understanding of renal tumors has evolved with new classifications and reevaluation of existing categories. Oncocytic renal tumors, once unclassified, now have a distinct diagnostic classification due to their significant prognostic and clinical importance.

Keywords: oncocytic tumor, chromophobe renal cell carcinoma, oncocytoma, immunohistochemistry

COMBINED SMALL-CELL LUNG CARCINOMA - A CASE REPORT

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Background: Combined small-cell lung carcinoma is defined by the presence of small-cell lung carcinoma component admixed with one or more components of non-small-cell lung carcinoma. In most of the cases the non-small-cell lung carcinoma component is represented by squamous cell carcinoma or large cell carcinoma, while adenocarcinoma is extremely rare. **Material and methods:** Our case is that of a 73-year-old patient underwent bronchoscopy due to imagistic findings of a lung tumor. **Results:** Microscopic examination showed the presence of a tumor characterized by a proliferation of 2 components: small-cell lung carcinoma and squamous cell carcinoma. On immunohistochemestry first component showed positivity for TTF1, CD56, with a Ki-67 high score (>95% reactive tumoral cells) and a characteristic ,,dot-like" perinuclear pattern for CTK AE1/AE3, while the squamous cell carcinoma component showed positivity for p40. Based on the tumor features our final diagnostic was that of non-small-cell lung carcinoma, NOS (Not otherwise specified). **Conclusions:** According to WHO, in the case of tumors with a biphasic appearance, the diagnosis of certainty is made after lung resection. Combined small-cell lung carcinoma is a rare malignant entity, with a few cases reported worldwide, within which knowledge of a wide spectrum of pathologies in association with immunohistochemistry are essential for a correct diagnosis.

Keywords: small-cell lung carcinoma, non-small-cell lung carcinoma, squamous cell carcinoma, immunohistochemistry

PARTICULARITIES OF PRIMARY HEMATOLOGIC MALIGNANCIES OF THE CENTRAL NERVOUS SYSTEM - A SERIES OF 10 CASES

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Background: The central nervous system, an immune-privileged tissue, is rarely affected by primary lymphoiproliferative neoplasms. Since a remarkable increase in their overall incidence has been observed in the last decade, the aim of our study is to map the clinicopathological features of the tumours diagnosed in the pathology department of the ECHTM in 2023, in order to establish an optimal immunohistochemical panel for histopathological diagnosis. We also discuss the pitfalls of diagnosis, the importance of clinical data and the results of paraclinical investigations. **Material and methods:** We considered primary central nervous system lymphomas to be those cases confined to the CNS parenchyma, dura, leptomeninges and spinal cord. Cases of tumours that had disseminated to the CNS were not included. We followed the clinical, imaging and paraclinical data of the patients in accordance with the histopathology. **Results:** In 2023, ten cases were identified as primary lymphoproliferative neoplasms of the CNS. Of these, six were diffuse large B-cell lymphomas (DLBCL) and four were plasma cell tumours. In the DLBCL group, a female predilection (mean age 66 ± 9.93 years) and a predominant right hemisphere involvement (83%) were observed. All plasma cell tumours were located in the thoracic region of the spinal cord, with equal involvement of both sexes (mean age 55 ± 11.54 years). Two patients were diagnosed with plasmacytoma with a Ki67 between 5% and 20%, while the other two patients had multiple myeloma with a Ki67 proliferative index of about 40%. **Conclusions:** As the histopathological identification of CNS tumours and their differentiation from other reactive processes often requires a minimal or less representative sample, immunohistochemistry is crucial in the recognition of CNS hematological malignancies, facilitating the diagnosis despite their rare occurrence and inconspicuous clinical presentation.

Keywords: Diffuse Large B-cell Lymphoma, CNS tumor, Immunohistochemistry

BIPHASIC SYNOVIAL SARCOMA: DIAGNOSIS, HISTOLOGICAL CHARACTERIZATION AND MOLECULAR IMPLICATIONS – A REPORT OF A CHALLENGING CASE

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Background: Synovial sarcoma (SS) is a soft tissue sarcoma of temporarily unknown histologic origin with the ability for biphasic differentiation, occurring mostly in the large joints and surrounding soft tissues of the extremities. Biphasic SS has epithelial and spindle cell components, in varying proportions. Rarely, epithelial cells show (keratinizing) squamous metaplasia. **Material and methods:** We present the case of a 22-year-old female patient, hospitalized in the Orthopedics Department with the diagnosis of synovial cyst in the right elbow. The patient underwent excision surgery and the specimen was sent for histopathological analysis. **Results:** Macroscopically, the specimen was quite well circumscribed had a yellowish tint and a whitish texture on the cut surface. Light microscopy revealed an infiltrative tumor with the typical biphasic pattern. It was composed of both spindle cells and epithelioid cells. The spindle cells were uniform in size and arranged in fascicular swirls, and the epithelioid cells formed glandular epithelial structures, lined by a cubic or columnar epithelium. Most glands had an intense eosinophilic content and areas of extensive squamous metaplasia have also been identified.Immunohistochemical analysis revealed positive results for CTK AE1/AE3, CK7, EMA, CD56, BCL-2 and negative for CK20, CD34, CD99, CD117, S100, SMA, SOX-10. The Ki-67 proliferation index revealed an increased activity, especially in the epithelial component. Histopathological diagnosis was established as biphasic SS, FNCLCC grade 2. Cyto-genetic examination performed at the Institute of Pathology in Budapest, revealed the fusion gene SS18:SSX2, which confirmed the diagnosis. **Conclusions:** Biphasic SS is a rare malignancy that is difficult to diagnose. This case highlights the importance of histological details, especially unusual histological features such as extensive squamous metaplasia ofthe epithelial component. In addition, we would also like to emphasize the importance of ancillary techniques such as immunocytochemistry and cyto-genetics for the accurate diagnosis of biphasic SS.

Keywords: biphasic synovial sarcoma, squamos metaplasia, immunohistochemistry, cyto-genetics

PRIMARY CARDIAC TUMOURS: A 10 YEAR SINGLE-CENTRE EXPERIENCE

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Background: Cardiac tumours count among the rarest neoplasms, with an approximated incidence of only 0.0005% during autopsy for primary tumours of the heart, and 0.001% for secondary metastases to this site. The objective of this paper is to analyse primary cardiac tumours diagnosed in the past decade in our centre. **Material and methods:** We have evaluated all primary cardiac tumours diagnosed at the Emergency County Hospital Târgu Mureș between January 2013 and September 2023. The information gathered from the Pathology Department archives was subsequently included in a database. **Results:** Of a total of 61 tumours, 58 (81.9%) were described as benign neoplasms, with myxoma being the most frequently reported type, whereas only 3 (4.9%) were diagnosed as primary malignancies: 2 undifferentiated sarcomas and one lymphoma. Other identified tumours included rhabdomyoma, fibroelastoma, reticulohistiocytoma, hemangioma, fibroma and hamartoma. A slightly higher prevalence among the female population (34 cases/55.7%, compared to 27/44.3% in males) was observed, and 8 cases (13.1%) were diagnosed in children under the age of 18. **Conclusions:** The results confirm the existing data in the literature, but the available information about primary tumours of the heart remains scarce. In some cases, due to their reduced incidence, primary cardiac neoplasms can prove to be challenging diagnoses.

Keywords: primary cardiac tumours, cardiac neoplasms, incidence

MASSIVE DERMATOFIBROSARCOMA PROTUBERANS- A CASE REPORT

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Background: Dermatofibrosarcoma protuberans (DFSP) is a rare form of mesenchymal tumor categorized as a superficial sarcoma with a low-grade malignancy. It exhibits an aggressive appearance and is notably prone to frequent recurrence. DFSP is most frequently observed in patients between the ages of 20 and 50, however there are documented cases at both ends of the age spectrum. The aim of this paper is to showcase a case study of a large DFSP that developed over an extended period without any apparent trauma. **Material and methods:** We describe the case of a 71-year-old patient with a interscapular neoplastic lesion,measuring 9 cm by 10 cm. During the physical examination, the mass was observed to be solid, sensitive to touch, surrounding, and not showing any redness.The growth of this lesion had been ongoing for 10 years. Under general anesthesia, a wide surgical excision was carried out, ensuring a minimum macroscopic margin of 3 cm **Results:** The histopathological diagnosis confirmed DFSP, revealing the presence of tumoral spindle cells arranged in a storiform pattern. The tumor cells exhibit an elongated morphology, moderate eosinophilic cytoplasm, and enlarged, pleomorphic nuclei. Additionally, 25 mitotic figures were observed per 10 high-power fields (HPF). Tumor cells interspersed with small adipocyte clusters, creating a honeycomb appearance.Imunohistochemically was performed, the tumor cells reveals strong and widespread expression of CD34 and vimentinwhile testing negative for S-100. The tumor proliferation index is estimated to be around 20%. **Conclusions:** In conclusion, this study sheds light on the clinical presentation, histopathological features, and immunohistochemical profile of dermatofibrosarcoma protuberans. Our findings underscore the importance of early diagnosis and precise surgical management for this rare soft tissue tumor. Further research is warranted to explore advanced treatment modalities and improve patient outcomes in cases of dermatofibrosarcoma protuberans.

Keywords: Dermatofibrosarcoma, mesenchymal, recurrence

VALUE OF CELL BLOCK AND IMMUNOHISTOCHEMISTRY IN THE DIAGNOSIS OF PLEURAL EFFUSION

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Background: Cell block is a handy, easy-to-perform technique that has become a routine and essential tool for the examination of effusion fluids. The sensitivity for a malignant diagnosis is much higher and allows performing immunohistochemistry in these cases. **Material and methods:** A retrospective study was carried out, January 2021-October 2023, within the Pathology Department of the Mureş County Clinical Hospital. The study included all cases of pleural effusion fluids for which cell block was performed and which were reported according to the International System for Reporting Serous Fluid Cytology (ISRSFC), developed by Springer in 2020. **Results:** A total of 457 pleural effusions were included in the study. Using ISRSFC, the following were identified: 49 cases (10.72%) included in Category I (Nondiagnostic), 270 cases (59.08%) included in Category II (Negative for malignancy), 39 cases (8.53%) included in Category III (atypia of undetermined significance), 45 cases (9.85%) included in category IV (suspicious for malignancy) and 54 cases (11.82%) included in category V (malignant). All malignant cases were represented by secondary determinations: 28 cases of lung adenocarcinoma, 21 cases of breast metastases, three cases of pancreatic metastases, one metastatic ovarian cancer and one metastatic melanoma. **Conclusions:** The cell-block technique is a straightforward method that significantly aids in diagnosing malignant pleural effusions. Furthermore, conducting immunohistochemical reactions on the cell block is crucial for determining the primary source of tumour cells. Both literature studies and ISRSFC show similar results to our study and promote the use of this method and a clear diagnostic algorithm.

Keywords: Pleural effusion, Cell block, Immunohistochemistry

PITFALLS OF A SMALL BIOPSY VERSUS EXCISIONAL BIOPSY IN DIAGNOSTIC OF AN ALVEOLAR RHAMBOMYOSARCOMA

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Background: Rhabdomyosarcoma is a small round cell sarcoma with a skeletal muscle phenotype. Its alveolar subtype represents approximately 20% of rhabdomyosarcomas with an incidence between 10 and 25 years. **Material and methods:** We present a case of a 15-year-old female patient with a perineal and right labial tumour mass associated with subcutaneous metastases on the left anterior chest. As the biopsy material was insufficient for histological diagnosis, the subcutaneous tumour was excised. **Results:** Microscopically, the small biopsy of 2 mm from the perineal tumour showed a relatively cell-poor tumour tissue with artefactual changes related to procedures used to stop excessive bleeding. Immunohistochemically, the tumour cells were diffusely positive for vimentin, WT1 protein and only focally positive for myogenin, with a proliferation index of Ki67 50%, but negative for CD99, CTK and lymphoid markers. Excisional biopsy of the skin tumour showed nests of small round cell proliferation with an alveolar pattern and fibrovascular septa. The tumour cells showed strong and difuse nuclear positivity for myogenin, cytoplasmic punctate positivity for desmin and pan-CTK, and strong and difuse cytoplasmic positivity for WT1 protein and vimentin, with a proliferation index Ki67 of 80%, but negative for CD99, SMA, S100 and calretinin. Based on the clinical site of the tumour, histological aspect and immunohistochemical reactions, the final diagnosis was cutaneous metastasis of alveolar rhabdomyosarcoma. **Conclusions:** Since small round cell tumours in children have a very similar histological appearance and immunophenotype due to their origin from undifferentiated cells, for a correct histopathological diagnosis, cases should be examined and evaluated according to an algorithm established by the oncoteam, which has a significant impact on the accuracy of diagnosis, treatment and prognosis.

Keywords: small biopsy, excisional biopsy, alveolar rhabdomyosarcoma

UNCLASSIFIABLE CERVICAL CARCINOMA: A RARE ENTITY WITH MULTIDIRECTIONAL DIFFERENTIATION

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Background: The 2020 WHO classification recognizes unclassifiable cervical carcinoma as an exceedingly uncommon malignancy that lacks identifiable histological differentiation. This carcinoma's hallmark features are epithelial in nature, with its origin determined using immunohistochemical markers, including CD56 and neuroendocrine indicators. It typically arises from either squamous cell carcinoma or neuroendocrine carcinoma and is frequently linked to Human Papillomavirus (HPV). **Material and methods:** We present a case involving a 41-year-old woman with a clinical stage IB2 exophytic tumor, approximately 4 cm in size, located on the cervical posterior wall. Radiological assessment revealed digitiform extensions in the endocervix, indicating posterior invasion and infiltration of adjacent adipose tissue, necessitating a biopsy. **Results:** Histopathological assessment revealed an infiltrative proliferation, architecturally mainly solid, having a partial glandular differentiation. The solid, undifferentiated component, consisted of small tumor cells, forming rosettes around blood vessels. Immunohistochemically, the glandular component displayed positivity for markers such as Cytokeratin AE1/AE3, CEA, Vimentin, Progesterone, Estrogen, and robustp16 expression. The undifferentiated component exhibited positivity for neuroendocrine markers, with weak Cytokeratin AE1/AE3 positivity and intense p16 expression. The histopathological diagnosis pointed to carcinoma with limited glandular differentiation and an undifferentiated small cell component with focal neuroendocrine marker expression. **Conclusions:** Unclassifiable cervical carcinoma is an aggressive malignancy with a high potential for rapid metastasis and elevated mortality. This tumor demonstrates diverse differentiation, often accompanied by the expression of neuroendocrine markers, emphasizing the need for vigilant clinical management.

Keywords: undifferentiated carcinoma, neuroendocrine carcinoma, cervix

MIXED NEUROENDOCRINE NON-NEUROENDOCRINE NEOPLASMS OF THE STOMACH, RECTUM, AND GALLBLADDER: CASE REPORTS AND LITERATURE REVIEW

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Background: Mixed neuroendocrine non-neuroendocrine neoplasms (MiNENs) are rare and aggressive tumors composed of neuroendocrine and non-neuroendocrine components. The pathophysiology, molecular characteristics, and prognosis are poorly understood because the tumor behavior is between that of a pure epithelial neoplasm and pure neuroendocrine carcinoma. **Material and methods:** We present three cases diagnosed with MiNEN tumors in the Pathology Department of Târgu Mureş.The first case refers to a 77-year-old male patient diagnosed with a gastric MiNEN composed of a poorly differentiatedadenocarcinoma (65%) and poorly differentiated neuroendocrine carcinoma (35%), with pT4aN1 stage. The neuroendocrinetumor cells were positive for Chromogranin A and CD56 markers. The second case is of a 75-year-old male patient with a rectumMiNEN constituted of a poorly differentiated neuroendocrine tumor (60%) and poorly differentiated adenocarcinoma (30%)developed on a tubular-villous adenoma, pT3N2aM1 stage, with liver metastasis. The neuroendocrine part was positive for CD56,NSE, and Synaptophysin immunohistochemistry markers. The third case presents a 77-year-old female patient with a MiNENtumor of the gallbladder consisting of poorly differentiated adenocarcinoma (60%) and small cell neuroendocrine carcinoma(40%), pT2bNx stage. The neuroendocrine component was focally positive for CTK20, CTK7, Synaptophysin, and NSE, with aKi-67 proliferation index of 40%. **Results:** The patients were referred to the Oncology Department and were treated according toNCCN guidelines; the more aggressive component of MiNEN was first considered to establish the treatment. **Conclusions:** Mixedneoplasms have a complicated history, especially in terms of nomenclature. The term 'MiNEN' was developed to include non-neuroendocrine epithelial components other than adenocarcinomas. The immunohistochemistry study is essential in the diagnosisof these types of tumors, the most abundant constituent establishing the management of the oncological treatment.

Keywords: MiNEN;, stomach;, gallblader;, rectum.

CONVENTIONAL CORDOMA OF A LUMBAR SPINE: A CASE REPORT

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Background: Chordoma is a rare malignant bone neoplasm with notochordal differentiation. Most commonly involves the skull base or the sacrococcygeal region, in a smaller percentage reporting also vertebral body localization. **Material and methods:** We present the case of a 74-year-old man presenting to the emergency room with back pain, walking difficulties and muscle weakness. CT scan revealed an extradural expansive process at the lumbar L4 vertebral body, which was clinically and radiologically suspected as a secondary finding. Surgical intervention was performed by laminectomy with decompression of the dural sac and L4 root. **Results:** The excised tumor fragments submitted for gross examination measured a total volume of 5 ml, greyish brown in color, some with bone tissue appearance and 5-8 mm in size. Microscopically, the tumor tissue exhibited an infiltrative character in the adjacent bone tissue with a predominantly lobular architecture, consisting of cords or nests, separated by an alcian-positive myxoid matrix resembling hyaline cartilage. Epitheloid tumor cells are large with clear to eosinophilic cytoplasm characterised by vacuolated or vesicular cytoplasm (physaliphorous cells), with reduced cytological and nuclear pleomorphism and rare mitotic figures. Immunohistochemical profile showed nuclear expression for brachyury, strong and diffuse expression of Vimentin, S100, Pan-CTK and negativity expression for CTK 7, CD10, RCC, HMB45. Ki67 index proliferation was less than 10%. **Conclusions:** Chordoma is a rare malignant neoplasm arising within the axial skeleton. The immunohistochemical stain Brachyury is essential in diagnosis of this entity.

Keywords: Chordoma, Notochord, Lumbar, Physaliphorous, Brachyury

PRIMARY RENAL WELL DIFFERENTIATED NEUROENDOCRINE TUMOR OF THE RIGHT KIDNEY: A CASE REPORT

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Background: Neuroendocrine tumors (NETs) are relatively uncommon neoplasms originating from neuroendocrine cells. Primary renal well-differentiated NETs (WDNETs) are exceptionally rare, with limited cases reported globally. This abstract presents a unique case of a well-differentiated NET in the right kidney, emphasizing the challenges in diagnosis and the rarity of such cases. **Material and methods:** A 69-year-old male patient was admitted to our institution with horse-shoe kidneys and a well-circumscribed right prerenal tumor diagnosed at abdominal computed tomography, which was surgically removed. **Results:** Grossing of the surgical specimen showed a 97x80x58 mm, encapsulated tumor, with heterogeneous aspect on cut-section, with brown-yellowish areas alternating with hemorrhagic foci. The histopathological analysis of the tumor showed a predominant architecture of nests and pseudo-glands, but also solid areas. Those aspects guided the diagnosis to a well-differentiated neuroendocrine tumor. The diagnosis was further confirmed by immunohistochemical stains: tumor cells were positive staining for neuroendocrine markers (Synapthophysin, NSE and CD56). Chromogranin was positive in less than 2% of tumor cells and Ki-67 index was notably low. Tumor cells were negative for RCC and CD10. **Conclusions:** WDNETs of the kidney are exceedingly rare, and their clinical presentation can be non-specific. Timely diagnosis and meticulous immunohistochemical analysis play a pivotal role in confirming the condition.

Keywords: renal neoplasms, renal well-differentiated neuroendocrine tumor, Synaptophisin

ATYPICAL METASTASES AS LATE RELAPSES OF CLEAR CELL RENAL CELL CARCINOMA IN THE LIP AND LARYNX

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Background: The most prevalent renal neoplasm is clear cell renal cell carcinoma (ccRCC), which is known to induce the phenomenon of late relapse linked to unusual metastases. Rarely, ccRCC can spread to the head and neck region, usually observed in the paranasal sinuses, thyroid gland, and parotid glands. **Material and methods:** We present the case of a 70-year-old man with a history of clear cell renal cell carcinoma (pT2a), limited to the renal parenchyma, that was surgically removed. After 12 years, he presented to the otolaryngology clinic with a supraglotic polypoid mass, and a few months later, he came back for assessment of a benign-appearing lip cutaneous tumor. Both lesions were surgically removed and sent for histopathological evaluation. **Results:** The laryngeal polypoid mass was grossly described as multiple grey fragments which presented microscopically as an ulcerated squamous epithelium with leukocytic and fibrinous exudate, with dilated vascular structures beneath, encircled by tubular structures and nests of large cells, with abundant and clear cytoplasm, irregular nuclei and visible nucleoli. The lip tumor was grossly described as an elastic brown nodular mass on a skin flap, showing similar microscopic characteristics as the laryngeal tumor. The lesion was composed of an intradermic proliferation of atypical cells with clear and abundant cytoplasm organized as tubular structures and nests, with visibly reduced stroma abundant in capillary structures and extended areas of hemorrhage. Both lesions were suspicious of ccRCC metastases and they were immunohistochemically confirmed by pan-cytokeratin, CD10, and RCC antigen positivity. **Conclusions:** Even though metachronous RCC is known to recur several years after unilateral total nephrectomy, head and neck metastases are uncommon. To extend the patient's life expectancy a vigorous follow-up is important to be conducted and RCC should be taken into account in any case of rapidly growing lesions as a differential diagnosis.

Keywords: ccRCC, metastases, clear cell, larynx, lip

MOLECULAR AND HISTOPATHOLOGICAL CHALLENGES OF COLORECTALMEDULLARY CARCINOMA: A CASE REPORT

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Background: Medullary carcinoma is a rare histological subtype of colorectal carcinoma characterized by a poorly differentiated/undifferentiated solid morphology, an aberrant immunohistochemical pattern and a high degree of microsatellite instability, most frequently in combination with BRAF mutation. **Material and methods:** We present the case of a 34-year-old young woman presenting to the emergency room with abdominal pain, anemia and hematochezia. Laboratory tests showed elevated leukocyte formula without detecting an increasement of serologic tumoral markers. CT examination revealed a thickened transverse colon wall adjacent to a gastro-colic fistula. Gastric biopsy was performed which revealed the possibility of a tumoral direct invasion. Following the histopathological result of the biopsy, a subtotal gastrectomy with omentectomy and resection of the monobloc transverse colon was applied. **Results:** Gross examination of the surgical sample revealed a colonic ulcero-infiltrative mass, presenting 32 mm in greater dimension, which circumferentially involved the intestinal wall and extended by direct invasion into the gastric wall, the gastric mucosa being elevated and associated to a gastrocolic fistulization tract as imagistic exam previously mentioned. Microscopically, an epithelial proliferation with a solid architecture, with pushing borders and prominent lymphoplasmacytic infiltrates within and around tumor was described. Immunohistochemical analyses showed strong and diffuse expression of Pan-CTK and negativity for CK7, CK20 and neuroendocrine markers. MMR proteins analysis showed loss of both MLH1 and PMS2 nuclear expression. Molecular analysis confirmed microsatellite instability with and both BRAF and KRAS were found to be wild-type. **Conclusions:** Medullary colon carcinoma is an under-recognized entity that, despite the lack of differentiation, is reported to have a good prognosis, especially in MSI associated with BRAF wild-type, but these molecular tests need to be interpreted in the clinical-imagistic setting of the patient, for a specific and accurate treatment.

Keywords: medullary carcinoma, MSI, BRAF, KRAS, colon

APPENDICULAR AND PERITONEAL ENDOMETRIOSIS: REPORT OF TWO CASES

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Background: Endometriosis is a relatively peculiar condition characterized by the presence of endometrial tissue outside the uterine cavity which may cause a wide spectrum of distressing symptoms, mimicking those of typical endometriosis or those of classical acute appendicitis. **Material and methods:** We present two cases of extrapelvic endometriosis. The first case was about a 32-year-old female presented to the emergency department reporting severe abdominal pain, accentuated in the lower right quadrant. Abdominal CT revealed an increased appendiceal diameter with wall thickening as well as a small peritoneal nodule. The second case was about a 36-year-old female presented to the emergency department accusing right lower quadrant abdominal pain with positive inflammation tests. CT scan revealed a deeply localized abnormal appendix, surrounded by inflammation and lymphadenitis, suggesting a possible tumor. Both cases underwent surgical removal of the suspicious masses and histopathological evaluation was performed. **Results:** For the first case, the appendix presented minimal transmural inflammation, while the peritoneal lesion exhibited a dilated cystic structure, lined by flattened simple cubic epithelium, which was immunohistochemically showed strong and diffuse expression of CD10, estrogen receptors, CK7 with a low Ki-67 proliferation index. In the second case, gross examination showed an indurated appendiceal wall, on sectioning it was intraluminal completely occupied by a white nodular mass, with a 12 mm greatest dimension. Microscopically, the muscular and subserosa layers were occupied by endometrial type glands surrounded by CD10 positive endometrial stroma. Both the glandular epithelium and stroma showed positivity for estrogen and progesterone receptors. **Conclusions:** Appendicular endometriosis poses as a complex surgical diagnostic case, as its symptoms may resemble uncomplicated acute appendicitis. Therefore, distinguishing between the two becomes clinically challenging suggesting that final diagnosis should always be after histopathological evaluation.

Keywords: endometriosis, appendix, peritoneal lesion, abdominal lesions

INCIDENTAL AUTOPSY FINDING OF CLEAR CELL RENAL CELL CARCINOMA WITH METASTASIS IN THE THYROID GLAND AND TEMPORAL SUBCUTANEOUS TISSUE

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Background: Clear cell renal cell carcinoma is the most common histological variant of renal cell carcinoma, usually symptomatic at presentation compared with other variants. However, a significant number of cases are asymptomatic with the tumor being diagnosed incidentally during radiological imaging or during autopsy. We present a case of clear cell renal cell carcinoma with metastasis in the thyroid gland and temporal subcutaneous tissue which was incidentally found during the autopsy. **Material and methods:** A 74-year-old deceased female patient sent from the Emergency Department for an autopsy to be performed, with the following clinical diagnosis: cardiorespiratory arrest unresponsive to resuscitation maneuver, severe hypothermia, chronic ischemic heart disease, chronic kidney disease, and hypothyroidism. **Results:** During the autopsy, besides bronchopneumonia, eccentric cardiac hypertrophy, and chronic lymphocytic thyroiditis, at the level of the right kidney, on the cut section a 90x70 mm well-defined mass was identified, having a yellowish color. In the temporal subcutaneous tissue, a 15x10 mm nodular mass was identified, of increased consistency, and another nodule within the thyroid gland. Histologically, the renal tumor consisted of nests of cells with clear cytoplasm and a distinct membrane surrounded by a network of arborizing thin-walled vessels. Large areas of hemorrhage and necrosis were observed along with the presence of lymphovascular invasions. The neoplastic cells showed immunoreactivity for RCC, CD10 and they were negative for Keratin AE1-AE3, Vimentin. The secondary lesions displayed the same architectural and immunohistochemical profile as the primary renal tumor. Based on the histological aspect and IHC-derived findings, the final diagnosis was clear cell renal cell carcinoma with metastasis in the thyroid gland and temporal subcutaneous tissue. **Conclusions:** Despite the fact that imagistic techniques have improved over time and more precise diagnoses should be made, there are still cases when incidental findings during autopsies prove to be the key to establishing the final diagnosis.

Keywords: renal cell carcinoma, incidental finding, autopsy

MUCOUS ENDOCERVICAL POLYP WITH MODERATE CERVICAL DYSPLASIA CIN II/H-SIL ASSOCIATED WITH HPV – CASE REPORT

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Background: The prevalence of endocervical polyps associated with positivity to high risk HPV types is approximately 7%, with a maximum incidence between 30 and 50 years. With almost all being benign in character, and the highest incidence of SIL in endocervical polyps to be around 1 in 200. **Material and methods:** We present the case of a 44-year-old patient who presented to the Mures County Clinical Hospital for the excision of an endocervical polyp, sent for evaluation to the Pathology Department. **Results:** Macroscopically, two tissue fragments of slightly irregular shape, elastic consistency, grayish brown color, with dimensions of 11x4x10 mm and 10x3x3 mm were observed. Microscopically we describe a polypoid structure, covered by a simple cylindrical epithelium showing foci of squamous metaplasia with changes suggestive of a moderate dysplasia (CIN II /H-SIL) - represented by a proliferation of atypical cells in the lower 2/3 of the epithelium with loss of nuclear polarity, nuclear pleomorphism and mitotic figures. At the stromal level, there is a proliferation of endocervical mucosecreting glands, of relatively equal size, some elongated, delimited by a simple cylindrical epithelium, surrounded by a stroma with a reduced chronic lymphocytic inflammatory infiltrate and congested blood vessels. The lesion displayed nuclear and cytoplasmatic, intense and diffuse immunohistochemical positivity for p16 in the lower 2/3 of the dysplastic epithelium, and Ki-67 showed similar nuclear expression. The diagnosis was Mucous Endocervical Polyp with moderate cervical dysplasia CINII/H-SIL associated with HPV. **Conclusions:** Most studies claim that polypectomy is not necessary based on the fact that the prevalence of HSIL is around1% and SCC is0.1%. But cervico-vaginal cytology and HPV testing have not been shown to be sufficient in screening for HSIL and SCC in the case of an endocervical polyp, and a pathological examination of the specimens is mandatory to provide sufficient diagnostic information for appropriate management of the disease.

Keywords: endocervical polyp, H-SIL, HPV

PATHOPHYSIOLOGY/DERMATOLOGY

A BIBLIOMETRIC APPROACH TO FUTURE DIRECTIONS AND RESEARCH HOTSPOTS IN PSORIASIS

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Background: Psoriasis is an immune-mediated disease with a complex etiopathogenesis that predisposes patients to a higher risk of associated comorbidities. In this paper, we aim to shed light on knowledge structure and identify future research directions in psoriasis by means of bibliometrics. **Material and methods:** We interrogated the Thomson Reuters Web of Science database for articles focusing solely on psoriasis, and a list of the top 100 most-cited articles was compiled. Included articles were analyzed for publication-related metrics and by using science mapping techniques. **Results:** Pathogenesis and epidemiology were the topics most discussed. Patients' quality-of-life has been a constant focus on the analyzed papers, emphasizing a high focus of the scientific community on this topic. A significant difference in publication and citation patterns in recent and older papers was observed. Recent work focused mainly on biologics. Keywords like "dendritic cells", "safety", and "necrosis-factor alpha" were the most used. **Conclusions:** Psoriasis research presents with rapid growth due to high interest and innovations constanly added to this field. Novel-targeted treatment molecules and immune pathways are at the center of psoriasis research in the future.

Keywords: psoriasis, biologics, bibliometry, citations

PEDIATRICS

ULTRASONOGRAPHY OF LYMPH NODES IN TB INFECTION IN CHILDREN – FROM PICTURE TO DIAGNOSIS

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Background: TB infection is the expression of reaction of human tissues against the bacillus. One of the most common signs is a painless lymphadenopathy, usually in the neck, but other region may be involved as well, hence, the importance of ultrasonography in any child with enlarged lymph nodes **Material and methods:** We present 2 cases of TB infection in children, in both patients ultrasonography was a very important imagistic choice and placed TB infection on the top of list of differential diagnosis **Results:** First case is a 5 months old baby with painless enlarged neck lymph nodes not responding to antibiotic treatment. The largest lymph node had no inflammatory signs, a bluish coloration of the skin above the lesion. No BCG vaccination. A close contact with 2 infected adults was confirmed by mother. Ultrasonography revealed round, hypoechoic ovalar lymph node, with inhomogeneous content, 13.6/14.5 mm, no Doppler signal, surrounded by smaller, rounded lymp nodes, located left latero-cervical and supraclavicular. A Chest Rx revealed a snow storm image, suggesting TB and Genexpert was positiveA 17 years old female, mother of an 8 months old baby, admitted with 2 weeks history of abdominal pain, lost weight, headache, fever, vomiting, and cough. Laboratory finding suggested a bacterial infection, gynecological and surgical pathology were ruled out CT shows multiple confluent nodular masses periceliacally, perimesenterically and pericolic on the right side, likely multiple adenopathic blocks. Abdominal ultrasonography suggested abdominal tuberculosis (versus tumoral lymph nodes), MRI and CT with contrast added more informations and Genexpert confirmed the aethiology **Conclusions:** TB infection is still a serious problem in children and it should be considered in any child with adenopathy, with or without history of contact with an infected adult. Ultrasonography is the first imagistic choice, may orientate the diagnosis and avoid unnecessary, expensive and potentially harmful investigations.

Keywords: ultrasound, children, adenopathy, TB infection

NECROBIOSIS LIPOIDICA IN PEDIATRIC PATIENTS

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Background: Necrobiosis Lipoidica is a degenerative illness of the dermal and subcutaneous collagen. The pathology was first described in 1929 by Oppenheim and was named "necrobiosis lipoidica diabeticorum" because it appeared most exclusively at diabetic patients. Later was proven that the appearance and progression of this skin lesion it is not directly related to diabeticcontrol and the lesion can appear also at non-diabetic patients. **Material and methods:** It is presented a 16-year-old female patient, diagnosed in July 2016 with diabetes type 1, and at the same time there were some dermal lesions detected, reddish -purple colored, in bilateral pretibial regions. These lesions presented themselves as erythematous nodules and had progressive growth. The first consult at our clinic was after a period of 2 years from the onset of the disease, and after providing the lab analysis it is found avalue of HgA1C : 12,74 %, and at the clinical examination we found dermal lesions of an irregular shape with depressed center onleft pretibial region. The patient was guided to a specialized dermatology consult were determined the diagnostic of necrobiosislipoidica diabeticorum. The recommended treatment was local administration of corticosteroids. **Results:** Necrobiosis lipoidica isone of the cutaneous markers of diabetes. The progression of the lesions does not correlate with normalization of hyperglycemia.The apparition of cutaneous lesions could be the first sign of diabetes. These lesions may be bacterial or mycotic infections, maybe inflammatory lesions. Other type of dermal affections as diabetic dermopathy, diabetic ulcers or eruptive xantomathosis are found mostly at diabetic patients. Most of these cutaneous lesions can be treated easily if they are properly diagnosed. **Conclusions:** Incase of cutaneous lesions with progressive and unfavorable evolution it is very important to raise suspicion of a diabetes mellitustype 1 diagnosis.

Keywords: diabetes mellitus type 1, necrobiosis lipoidica, skin lesions

THE IMPACT OF THE PHENOTYPE IN THE AORTIC BICUSPID IN THE CHILD

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Background: The bicuspid aortic valve (BAV) is a congenital cardiac defect with a high prevalence in general population can have an unpredictable evolution especially if associated with aorta dilatation form a young age and has been associated with aortic stenosis or regurgitation.This study aims to comparatively assess the demographic, anthropometric and valvular phenotype characteristics of a pediatric population with BAV and another age- and sex-matched study group of children with BAV-associated stenosis. Secondarily, we aimed to investigate whether valvular phenotype and pro-BNP values correlate with severity of aortic valve stenosis and regurgitation and with aortic dilatation **Material and methods:** This study enrolled a population of 55 children with BAV, who underwent a echocardiographic assessment. Depending on the presence of aortic valvular stenosis, the division of the study population was established: a group consisting of 27 children diagnosed with BAV and one of 28 children with BAV and aortic stenosis. The following parameters were measured in each child: body weight, height and NT-pro-BNP. Body surface (BS), body mass index (BMI) and BMI percentile were consecutively calculated **Results:** There were no significant differences between the two study groups in terms of mean age, gender distribution, BMI, BMI percentile and BS. Similar prevalence of aortic regurgitation was found among the two groups, but aortic dilatation was significantly more frequently encountered among patients with aortic stenosis (p=0.03, OR=0.28). Pro-BNP values were normal in both groups.Phenotype IB seemed to correlate with aortic stenosis. **Conclusions:** Aortic stenosis seems to enhance the risk of aortic dilatation in children with BAV. Within our study, NT-proBNP did not emerge as a risk factor for severity of the BAV- associated valvulopathy and aortopathy, whereas phenotype IB particularly seems to be associated with aortic stenosis. This work was funded by UMFST Tg Mures research, grant nr 163/1/10.01.2023

Keywords: the bicuspid aortic valve, child, aortic stenosis, aotopathy, NT-proBNP

VERY EARLY ONSET CROHN DISEASE – A REAL CHALLENGE FOR BOTH THE PHYSICIAN AND FAMILY

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Background: Very early onset inflammatory bowel disease (VEO-IBD) is defined as IBD in children younger than 6 years of age. It was proved that most of these cases are associated with an underlying primary immunodeficiency or monogenic etiology. **Material and methods:** We report the case of 2 year-old male child diagnosed at the age of 1 year with Crohn's disease (CD) for highlighting the burden related to the management in children with VEO-IBD. **Results:** The patient's history revealed intermittent bloody diarrheic stools and weight deficit who was diagnosed with CD affecting both the upper and lower gastrointestinal tract based on the exam of gastric and bowel biopsy specimens. We initiated corticosteroids associated with mesalazine. The patient responded well to the initial high dose of corticosteroids with the remission of symptoms. Nevertheless, once we started to tapper the corticosteroids, the symptoms reappeared. Therefore, we introduced azathioprine in his treatment associated with a low dose of corticosteroids, but with no major improvements after 12 weeks and without the possibility to stop corticosteroids. As our last option, we decided to start a biological treatment with infliximab. During the first administration, the patient presented nausea, hematemesis, and rash, which worsened during the second administration being associated with an increased level of infliximab antibodies, and lead to the cessation of infliximab. Moreover, after approximately 6 months of azathioprine the patient developed shortness of breath and the lung CT showed multiple ground-glass opacities associated with interstitial fibrosis. We found no evidence of infectious causes, and thus we related these findings to azathioprine resulting in the impossibility to administer it. Currently, the patient was referred to a specialized center in IBD for further management. **Conclusions:** VEO-IBD requires a close partnership between physician and family, but unfortunately it presents with a poor prognosis mainly related to the management.

Keywords: Very early onset inflammatory bowel disease, child, challenge

THE DARK FACE OF SINUSITIS IN PEDIATRICS

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Background: Sinusitis in considered most-often a benign pathology with a good response to antibiotics. Nevertheless, in particular cases the lack of compliance to treatment or certain underlying factors might result in life-threatening complications such as meningoencephalitis and stroke. **Material and methods:** We report the case of a 14-year-old teenager admitted in our clinic for right limbs motor deficit, peripheral facial paresis and language deficit with an onset of approximately 12 hours. **Results:** The patient's history indicated that 1 week before the onset of these symptoms he was admitted for pansinusitis, but the family requested the discharge on the 7th day of treatment. The laboratory tests at admission pointed out leukocytosis with neutrophilia and increased inflammatory biomarkers, while the brain CT showed only pansinusitis. The lumbar puncture performed on the 1st day of admission pointed out low glycorrhachia and increased level of leucocytes, but with negative culture of the spinal fluid. We initiated wide-spectrum antibiotics (meropenem and vancomycin), associated with dexamethasone and furosemide for cerebral edema. After 24 hours, we repeated the brain CT revealing an major ischemic stroke in the left internal capsule. Thus, we associated also low molecular weight heparin. The neurologist recommended the continuation of the treatment and initiation of B complex vitamins. The peripheral facial paresis, an unusual manifestation in patients with stroke was interpreted as a complication of sinusitis, and not cerebral ischemia. The patient's clinical and paraclinical evolution was favorable, with the progressive improvement of both motor and language deficit, as well as facial paresis during admission, being discharged after approximately 3 weeks. The monitoring at 6 months revealed no signs of language deficit, the complete resolution of facial paresis, with a minor motor deficit of the right limbs. **Conclusions:** Sinusitis might be a tricky pathology in pediatrics.

Keywords: sinusitis, child, ischemic stroke

SECONDARY SEVERE PULMONARY HYPERTENSION IN A DOWN PATIENT WITH VENTRICULAR SEPTAL DEFECT

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Background: We present the case of a 12 years-old male child with Langdon-Down syndrome, diagnosed with Ventricular Septal Defect with echocardiographic signs of severe pulmonary hypertension. The difficulty of the case resides not only from the wide spectrum of comorbidities, but also from the delay of operative timing. **Material and methods:** The child presents to our clinic with clinical signs of cardiac failure. Echocardiographic we describe a large inlet ventricular septal defect with pulmonary hypertension signs. The personal pathological hystory of the patient is rich, with multiple digestive surgical interventions in neonatal and infancy period, endocrinological disease - Hashimoto's thyroiditis, otorhinolaringological issues - adenoiditis surgically treated and the genetic disorder with neuropsychomotor developmental delay. **Results:** The echocardiographic signs of severe pulmonary hypertension were confirmed with invasive measurements via cardiac catheterisation and because the patient was in the Grey zone for the surgical correction, we decided to initiate pulmonary vasodilator combined therapy. **Conclusions:** In conclusion, we emphasize the importance of correct periodic reassessment of children with congenital heart disease, as exceeding the operative timing entails serious consequences on the quality of life of these patients (with high morbidity and mortality rate), but also a very difficult subsequent management of the cardiac pathology.This work was supported by the internal research grant of UMFST George Emil Palade Targu Mures, Grant number 163/8/10.01.2023

Keywords: pulmonary hypertension, down, child, ventricular septal defect

THE INCIDENCE OF HEMODINAMICALLY SIGNIFICANT PATENT DUCTUS ARTERIOSUS IN PRETERMS ≤ 32 WEEKS OF GESTATION – A PILOT STUDY

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Background: Persitent Ductus Arteriosus (PDA) in preterm infants may have a role in early and late complications due to hemodynamic alterations. As part of a larger study, the incidence of hemodynamically significant PDA was assesed in the most vulnerable group, preterms ≤ 32 weeks of gestation, admitted to Tg-Mures Regional Neonatal Intensive Care Unit (NICU), during 2022. **Material and methods:** We measured the diameter of the Ductus Arteriosus (DA) and Left Atrium to Aorta root ratio (LA/Ao) at 24 and 72 hours of life. Hemodynamically significant PDA was defined as an internal diameter of DA ≥ 1.5 mm, and LA/Ao≥ 1.4 at 72 hs of life. Exclusion criteria were gestational age > 32 weeks, death in the first week of life and/or ductus dependent congenital heart defects. Outcome at 28 days were compared in the two studied groups. Data were statistically analyzed, calculating RR and checking significancy with Chi-square and Fisher exact one and two-sided tests, ($p<0.05$ at a CL of 95%).Acknowledgement: "This work was supported by the University of Medicine, Pharmacy, Science and Technology "George Emil Palade" of Târgu Mureş Research Grant number 10126/3 17.12.2020." **Results:** In 2022 94 infants were admitted with ≤32 weeks gestation (mean 28.43±3.00), with birthweight of 1122.83±398.14g. 11 (12.5%) met including criteria, with weighting 947.27g(±228.56g), and gestational age 27.09(±2.02). The DA diameter was 2.22(±0.62)mm at 72 in the group of significant PDA versus control, with 0.55(±0.47)mm at 72hs. In the PDA group, regarding the 28 days outcome we found 7 infants with1-3 complications, 6 of them deceased, while in the control group, 11 with complications and 6deaths. The risk ratio to develop complication showed significant difference in the two groups: RR=5.09, Chi-square p=0.0000, Fisher exact one and two sided 0.0005. **Conclusions:** Hemodynamically significant PDA shows elevated risk to develop early or late complications and death.

Keywords: preterm, hemodynamics, PDA

STUDY ON THE HOSPITALIZATION OF CHILDREN WITH BRONCHIAL ASTHMA IN RELATION TO VARIOUS RISK FACTORS

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Background: Aim: the analysis of hospitalization episodes in a group of pediatric asthmatic patients and the relationship between risk factors and the hospitalization for exacerbations. **Material and methods:** Retrospective, transversal, observational study on a group of 63 pediatric patients known to have bronchial asthma, hospitalized in the Pediatric Clinical Department of SCJU Târgu-Mureş, between January 2019 and June 2023. **Results:** The length of hospitalization was between 2 and 12 days, with an average of 4.84±2.91 days. A number of 35 patients (55.56%) had only one hospitalization, 15 children (23.81%) had 2 hospitalizations, 3 cases (4.76%) had 3 hospitalizations, 5 asthmatics (7.94%) had 4 hospitalizations, and another 5 patients (7.94%) had more than 6 hospitalizations. The mean number of hospitalizations was 2.09±1.99.No significant associations were identified between anamnestic aspects and hospitalizations for asthma exacerbation, except for the statistically significant, but weak, correlation between birth weight and the number of hospitalizations (r=-0.28, p=0.02). The children were properly vaccinated in a proportion of 55.55% (n=35).Various allergies were documented in 53.84% (n=21) of cases (respiratory: dust mites, dust, pollen, cat or dog hair; food: egg proteins; drugs: penicillins, non-steroidal anti-inflammatory drugs), and 68.25% (n=43) were passively exposed to cigarette smoke.The nutritional status was normal in 50.79% (n=32) of the children, the other having deficit or excess nutritional status disorders. **Conclusions:** Almost half of the asthmatic children had multiple hospitalizations in the analyzed time interval, the average length of hospitalization being around 5days.Only a little over half of the cases had the complete vaccination schedule.Over half of asthmatic children are known to have allergies; urban living area can increase the risk of allergies.More than two thirds of the patients were passively exposed to cigarette smoke;the unexposed children required fewer hospitalizations.Almost half of the asthmatic children have nutritional status disorders, without these having an influence on the duration and number of hospitalizations.

Keywords: asthma, child, hospitalization, risk-factor

PHARMACY

METHODS OF DETECTING ADULTERATION OF DIETARY SUPPLEMENTS

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Background: Adulteration of dietary supplements refers to the act of adding prescription drugs, or substandard ingredients to supplements with the intent to deceive consumers or increase profits. Adulterated supplements might contain active pharmaceutical ingredients not listed on the label found in prescription medications, involve incorrect dosages of active ingredients, or substitution of expensive ingredients with cheaper, ineffective, or even potentially harmful ones. Adulteration is a serious issue because adulterated supplements can pose significant health risks to consumers. **Material and methods:** Detecting adulteration in dietary supplements is crucial to ensure the safety and efficacy of these products. There are several methods and techniques used by regulatory agencies and researchers to identify adulterated dietary supplements, among these we can distinguish: High-Performance Liquid Chromatography (HPLC), Gas chromatography (GC), Capillary Electrophoresis (CE), Mass Spectrometry (MS), Nuclear Magnetic Resonance (NMR), Fourier Transform Infrared Spectroscopy (FTIR). **Results:** LC-MS is considered today the golden standard in detection of adulteration as LC is used to separate, identify, and quantify individual components; at the same time MS helps in determining the molecular composition of compounds present in the supplement, which can identify both intended and unintended substances. GC-MS is used to identify volatile and semi-volatile compounds, being effective for detecting contaminants like pesticides or residual solvents. NMR provides information about the chemical structure of compounds, being used for identifying unknown substances in a sample. **Conclusions:** It's important to note that the choice of method depends on the specific type of adulteration suspected and the nature of the dietary supplement. Often, a combination of techniques is used to ensure comprehensive testing and accurate results. The development of new analytical techniques and technologies is essential to combat adulteration in dietary supplements effectively.This research was funded by the University of Medicine, Pharmacy, Science and Technology "George Emil Palade" of Târgu Mureş, internal grant contract number 511/3/17.01.2022.

Keywords: dietary supplements, adulteration, analytical chemistry techniques

CLINICAL STUDY SCREENING THE EFFECTIVENESS OF THE COSMETIC PRODUCT APPLIED BY NON-INVASIVE METHODS BASED ON ELECTRICAL STIMULATION OF THE SKIN

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Background: Currently, the absorption promoters included in cosmetics still do not bring the sufficient amounts of actives intothe skin. So that, concerns are focused on developing equipment capable of maximized but non-invasive delivery, which can beused safely at home by the consumer, not only in the beauty salon. Electrical stimulations are frequently used methods, as closer to physiological. This study aimed to evaluate the effectiveness of three devices that apply electric currents onto the skin: directcurrent, combined direct and alternating currents, and multiple single short pulsed current. **Material and methods:** A clinical trial(ethically approved) was conducted on a panel of healthy human subjects (n = 7; female, phototypes II-III); applying once acommercial cosmetic containing hyaluronic acid in combined dispersions: dissolved (low molecular weight) and liposomal; usingwater as activity blank. The sample was applied for 1 minute; under electrical stimulation through each of the three methodscompared; using manual massage as method's activity blank. The in vivo effects were measured (by corneometry, tewametry andmexametry): before the application (Ti), after 4 (T4h) and 24 (T24h) hours. **Results:** One day after the hyaluronic treatments(T24h), the increases in the hydration levels (of 21.8-24.8%) and the variations in the transepidermal water loss (-8.3/13.7%) werestatistically comparable in all tested areas ($p>0.05$), but each being significantly different compared to the activity blank ($p<0.05$, inall cases). The erythema levels decreased slightly (-2.34/-7.34), significant only for the combination of currents ($p=0.0031$). **Conclusions:** Each of the electrical stimulation applied has its own mechanism through which it temporarily permeabilizes the skin. The hyaluronic acid penetrates into the skin (acting as water-fixer) and/or stations on top in the form of a water-soluble film (acting as emollient occlusive). The induced changes in the structure of the skin barrier (perspiration, pigmentation, erythema) correlates insignificantly with the change in hydration levels.

Keywords: screening trial, galvanic ionization, virtual mesotherapy, electrical skin thermo-nano-ablations, liposomal hyaluronic acid

CORRELATION OF DISINTEGRATION TIME AND AMOUNT OF ACTIVE PHARMACEUTICAL INGREDIENT RELEASED FROM NEW FORMULATIONS OF CANNABIDIOL ORODISPERSIBLE FILMS

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Background: This study aims to correlate the disintegration time with the dissolution behavior of the CBD-ODFs. Considering that cannabidiol (CBD) is an active pharmaceutical ingredient included in the second Biopharmaceutical Class (BCS II), establishing a suitable dissolution media might represent a challenge. **Material and methods:** The variable consisted of the typeand the polymer concentration resulting in five formulations ODF1 (5% hydroxypropyl methylcellulose-hypromellose HPMCE5), ODF2 (7% HPMCE5) ODF3 (9% HPMCE5), ODF4 (3% Polyvinyl alcohol - PVA), and ODF5 (5% PVA) were developedusing the solvent casting method. The disintegration time was verified via two methods, a pharmacopeial method and the SlideFrame Method. To evaluate the amount of API released a previously validated spectrophotometric UV method was used. TheODFs were dispersed in 900 mL of phosphate buffer, pH=6.8 in an Erweka apparatus with a basket. **Results:** ODF2 and ODF3did not respect the in-force Ph. Eur. requirements regarding the disintegration time, as a result, they were excluded. Concentrationhigher than 5% in the case of HPMC conducted to disintegration times that exceeded the admitted limit of 3 minutes. A betterbehavior considering the disintegration time was noticed when the pharmacopeial method was used. The type and concentration offilm-forming agents influence the amount of active pharmaceutical ingredients released. The use of 5% HPMC resulted in amountsof API released lower than 30% at 30 minutes for the HPMC-ODFs, whilst in the case of PVA-ODFs, concentrations were higher than 80% at 30 minutes for both ODF4 and ODF5. **Conclusions:** The type and concentration of film-forming agent influence both the disintegration time and the amount of API released. The ODFs with PVA showed superior behavior regarding the disintegration time and the amount of CBD released at 30 min. It was noticed that a slow disintegration time also implies a slower release of the active ingredient.

Keywords: CBD-ODFs, disintegration behavior, dissolution media, hypromellose, polyvinyl alcohol

BALANCE BETWEEN EFFICACY AND SEVERE ADVERSE REACTIONS ASSOCIATED ANTIBACTERIAL FLUOROQUINOLONES

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Background: Fluoroquinolones (FQNs) are antibiotics usually used to treat infections. However, their usefulness is questioned because FQNs are linked to severe side effects (SSEs). There have been reported SSEs associated with certain FQNs. Consequently, some FQNs were withdrawn after a few years from their approval. However, several new antibacterial FQNs have been recently approved by the Food and Drug Administration (FDA) or the European Medicine Agency (EMA): besifloxacin, delafloxacin, finafloxacin, nadifloxacin, and ozenoxacin. Also, other new representatives are used to treat bacterial infections only in their origin countries. **Material and methods:** Safety warnings concerning the SSEs of FQNs issued by the FDA, EMA, and regulatory authorities from different countries were analysed. Relevant references concerning SSEs of FQNs were identified with the help of scientific databases (Clarivate Analytics, PubMed, and ScienceDirect). **Results:** Label revisions for all systemic FQNs and a Black Box Warning about the possibility of irreversible SSEs occurring together in the same patient were implemented. The relevant side effects of the FQNs class were approached, emphasising the available data for the recently approved ones. The underlying processes causing the most often reported SSE have been discussed. With reasonable side effects, modern FQNs exhibit antibacterial solid efficacy against various resistant pathogens, including those resistant to FQNs. Post-marketing surveillance is expected to validateor refute the established safety profile of these novel antibacterials. **Conclusions:** FQNs should only be used to treat illnesses whenno other treatment alternatives exist. Excessive use of FQNs in hospitals should be reconsidered. The appropriate usage and caution regarding new FQNs and the general management of SSEs were highlighted. Judicious use is necessary for the new FQN representatives to preserve them as valuable antibiotics, not as past discoveries.

Keywords: fluoroquinolones, adverse reactions, side effects, adverse effects

SAPONINS AS MODULATORS OF ADIPOGENESIS

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Background: Understanding the molecular mechanisms underlying the anti-adipogenic effects of natural compounds is essential in the context of combating obesity. The 3T3-L1 cell line is a widely recognized model for studying various mechanism associated with adipogenesis and diabetes. Saponins are bioactive compounds found in various medicinal plants, and have exhibited potential in regulating adipocyte differentiation. The pathways through which different saponins modulate adipogenesis in 3T3-L1 cell line are presented in this paper. **Material and methods:** A literature search of electronic databases (PubMed, Scopus, and Web of Science) was performed, using combinations of the following keywords: ,,3T3-L1'', ,,saponins'', ,,adipogenesis''. Only papers published in the last ten years were chosen. **Results:** Out of the 64 articles included in the present study, 23 studies were focusedon the effects of saponins extracted from different Panax species, and unique mechanisms of action in the 3T3-L1 cell line werenoticed (inhibition of the NF□B signaling pathway, stimulation of glucose-uptake, inhibition of adipogenesis via the AMP-activatedprotein kinase and mitogen-activated protein kinase signaling pathways, modulation of peroxisome proliferator-activated receptor-gamma expression). Other triterpenoids extracted from different herbal drugs, exhibited similar actions, triterpenoids being able to modulate adipogenesis at early stages in the differentiations process as well as the mature adipocyte formation. Interestingly, out of the selected papers, only three studies evaluated the effects of sterolic saponins, the majority of the studies being focused on triterpenoid saponins. **Conclusions:** Saponins extracted from different herbal products can modulate the adipogenesis in 3T3-L1 cells. These compounds present promising avenues for further investigation and development of interventions against obesity andits associated complications. Also, this review suggests that data regarding the effects of steroidal saponins on adipogenesis is scarce,and more research is needed in order to fully understand these effects. This research was supported by the Ministry of Education, through the Credits and Scholarships Agency, contract number 5109/20.07.2023.

Keywords: saponins, adipogenesis, 3T3-L1 cell line

GAS CHROMATOGRAPHIC ANALYSIS OF VOLATILE OIL OBTAINED FROMHERACLEUM SPHONDYLIUM AND HERACLEUM SOSNOWSKYI, COLLECTED INROMANIA.

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Background: The species *Heracleum sphondylium* L. (hogweed) (HSP) is native to Romania, while *Heracleum sosnovskyi* Manden (HSW) is an invasive species originally from Asia. In Romania we find dozens of food supplements with hogweed, indicated for general tonic effect, hypotensive effect, immunostimulant, to increase fertility and potency. This paper presents the analysis of the essential oil by GC-MS. **Material and methods:** Hydrodistillation using a Clevenger apparatus was used to isolate essential oilfrom the leaves and fruits of HSP and HSW. Instrument: 7890 B GC 5977 A MSD system Agilent). Column: HP 5 MS UI, 30 mx 0 25 mm, 0 25 µ m Agilent). Carrier gas Helium, Flow rate 1 mL/min, Oven 60 ° C 1 min), 60 250 °C (ramp 10 °C/min), hold250 °C 5 min). Injection volume Spitless 1 µ L. Detection Scan, range 40 5 0 0 m/z. MS spectra analysis NIST 14 and MPW 5 e library. **Results:** The essential oil content of the leaves and fruits of HSP ranged from 0.04% to 1.2%, while that of HSW ranged from 0.2% to 5%. In the mature fruits of both species, the main constituent of the essential oil is octyl acetate. In the immature fruits of HSP there is still a significant amount of tetracosane, which is the main compound in the leaf essential oil. In HSW leaf samples ⍵-hexadecalactone, caryophyllene are the main components. In the aromatic waters, ester compounds dominate. In a commercial herbal tea sample of HSP made from leaves and flowers, beta-phellandrene, (+)-spathulenol and nerolidol were identified as major compounds, along with many other sesquiterpenes. **Conclusions:** The content of essential oils in all organs was lower in HSP than in HSW. This work was supported by the University of Medicine, Pharmacy, Science, and Technology "GE Palade" of Târgu Mureș (GI 164 / 17 / 10.01. 2023).

Keywords: Heracleum sphondylium, Heracleum sosnovskyi, essential oil, GC-MS analysis, octyl acetate

PNEUMOLOGY

CARDIAC ARRHYTHMIA: A FREQUENT COMPLICATION IN THE COURSE OF COPD?

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Background: COPD is an important and underappreciated risk factor for atrial and ventricular arrhythmogenicity. Most studies that included patients with atrial fibrillation reported COPD based on clinical history and/or inhaled medications. The presence and severity of COPD are associated with an increased likelihood of atrial fibrillation/flutter, unsupported ventricular tachycardia, and sustained ventricular tachycardia. **Material and methods:** We conducted a retropective study between 01.09.2022 and 01.10.2023 in the Pneumology Clinic where we analyzed hospitalized patients with the diagnosis of COPD. Data from the informatic system were analyzed and information on arrhythmic cardiac pathology was extracted. **Results:** Of the 1545 patients included in the study group, we identified 253 patients with rhythm disorders. Atrial fibrillation was the highest frequency arrhythmia recorded in patients diagnosed with COPD. In our study, the frequency of atrial fibrillation was not correlated with the severity of COPD, with the most common arrhythmias occurring in stages II and III of COPD (60 cases with atrial fibrillation in stage II, respectively 62 in stage III). **Conclusions:** Recurrent exacerbations of COPD and resulting decline in lung function lead to increased cardiovascular risk and mortality and are associated with autonomic dysfunction, which potentiates adverse cardiovascular effects.

Keywords: COPD, cardiac arrythmhya, atrial fibrillation, hypoxia

SECONDARY PRIMARY NSCLC IN A PATIENT KNOWN WITH GASTRIC MALIGNANCY – CASE REPORT

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Background: The rate of secondary primary malignancy (SPM) is continuously increasing. SPM is not related to the phenomenaof cancer recurrence or metastasis but involves the appearance of a different type of malignancy from the first primary malignancy (FPM) in the same patient. **Material and methods:** We present the case of a 69-year-old male patient, with a history of gastric carcinoma for which he underwent surgery, radiotherapy, and chemotherapy in 2013. Nowadays, the patient presented himself to the hospital accusing dyspnea and episodes of dry cough. A series of clinical and paraclinical examinations was performed to properly assess the case. **Results:** Esophagogastroduodenoscopy (EGD) showed no signs of local recurrence of the gastric malignancy. A whole-body CT scan with contrast medium injection revealed the presence of a space-occupying lesion in the right upper lobe/right medium lobe of the lung of approximately 52/50/58 mm, with irregular borders and hypodense areas. The lesion was not approachable bronchoscopically. Bronchoscopy revealed purulent secretions in the right upper lobe bronchus and the obtained bronchial aspirate confirmed the presence of E. coli. *CT-guided* percutaneous *transthoracic biopsy was also performed.* The anatomopathological examination described the presence of infiltrative tumoral tissue, with focal areas of both glandular lumensand solid architecture. The immunohistochemical profile was positive for thyroid transcription factor 1 (TTF1). Thehistopathological diagnosis of the case was non-small cell lung carcinoma (NSCLC) in favor of an adenocarcinoma. Additionalmolecular testing (PD-L1, ALK and EGFR) was recommended. **Conclusions:** The combination of gastric cancer and lung canceris rare, estimated at 10% of cases. In conclusion, we emphasize a rare situation, in which a patient known with gastric neoplasmdevelops a second primary malignancy in the lung 10 years after the inital diagnosis. The presence of E. Coli pneumonia enhancesboth the severity and the complexity of the case.

Keywords: gastric cancer, lung cancer, secondary primary malignancy, , E. Coli pneumonia

PSYCHIATRY

CORRELATION BETWEEN SERUM SEROTONIN AND GLYCATED HEMOGLOBIN IN DIABETIC PATIENTS

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Background: The coexistence of two or more chronic pathologies means a reduced quality of life, respectively an alteration of the patient's functional state. Type II diabetes is a pathology characterized by glycemic disorders due to insufficient insulin secretion, peripheral insulin resistance or both. Diabetes comorbid depression is an incompletely studied field, but with a significant impact on the evolution of the disease. The common element between the two pathologies is serotonin. **Material and methods:** The study considers the correlation between the serum level of serotonin, the stage of depression and the type of antidiabetic used chronically by patients with type II diabetes. In this sense, blood glucose control is quantified by measuring the level of glucose and glycated hemoglobin and as regards depressive pathology, it is quantified using the Hamilton depression scale. The statistical analysis of the data is validated with validated statistical tools in which the mean, the standard error, the student T-test, the ANOVA test were used to compare the data. **Results:** The results of the study focus on the correlation of the serum serotonin level with the stage of depression and the control of diabetes or with the type of antidiabetic used. It was also highlighted how antidiabetic treatment can benefit antidepressant therapy. **Conclusions:** The study indicates a significantly higher prevalence of depression and anxiety in patients with type II diabetes than in the general population, highlighting the need to study together, interrelating the two pathologies. Acknowledgement: This work was supported by George Emil Palade University of Medicine, Pahrmacy, Science and Technology of Targu Mures, Research Grant Number 164/25/10.01.2023

Keywords: serotonin, glycated hemoglobin, depression, diabetes, blood glucose

RISK FACTORS ASSOCIATED WITH COERCION IN MENTAL HEALTH SERVICES

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Background: The negative impact of coercion in mental health on patients and secondary on long term prognosis of outcome of severe mental illness is well known and proved by research. (Knutzen M, 2014) Coercion appeared in mental health services as a need in specific situation for avoiding aggressive behaviour of psychiatric patients toward themselves or others. The purpose of this article is to explore the risk factor associated with coercive measure in mental health services. The outcome of this process is to be used in prevention of coercive measures. **Material and methods:** Review of the articles presenting risk factors of coercion, theoretical models explaining the violence integrating biological, psychological and sociological ideas, and we try to elaborate a coherent model to include all risk factors. **Results:** We organised the risk factors associated with coercion in three categories: A. associated with patient, B. associated with environment, C. associated with medical staff. From many theoretical models explaining the violence, we used the bio-psycho-social model to understand the factors which could influence the initiation of coercive methods. If we change the paradigm and consider coercive measure as response of a treat perceived we elaborate a model to prevent coercion in Mental health services. In this way the professional environment, education of mental health staff, increasing the empathy, debriefing, psychotherapy and presence of legislation could be preventive factors which could reduce the use of coercive measures. **Conclusions:** The proposed model created for didactical purposes may be helpful for a comprehensive understanding of all relevant influencing factors in violent behaviour in mentally ill people and the intervention need it for prevention of coercive measure

Keywords: coercion, violence, prevention, aggression, mental disorder

PUBLIC HEALTH

IMPORTANCE OF MATERNAL FOLLOW-UP AND BACTERIOLOGICAL SCREENING IN PREVENTING PERINATAL INFECTIONS

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Background: Neonatal infections continue to represent an increased incidence among newborns with both short-term and long-term consequences. Adequate maternal follow-up care and screening for common infections represent the first steps on preventing peripartum infections. Furthermore early detection of neonatal infections are important in terms of neonatal morbidity and mortality. **Material and methods:** The aim of this study was to evaluate the impact of perinatal risc factors on neonatal infections. Therefore our material included 80 newborn born between 01.01.2022. - 31.07.2022. in our tertiary center and who were at risc of materno-fetal infection (prolonged rupture of membranes, maternal fever or premature birth) and analyzed the followings: maternal and neonatal risc factors, need of reanimation in the delivery room, postpartum neonatal adaptation, maternal laboratory and bacteriological tests, neonatal clinical status and paraclinical tests. Exclusion criteria were: lack of micobiological sample, major congenital anomalies. Our patiens were divided into two groups: the studied group included newborns with confirmed infection (55) whereas the control group was represented by healty neonates (25). **Results:** Adequate maternal follow-up was made in 61.2% of the cases, maternal infections were documented in 7.5% of the cases. Among mothers with positive screening from lower genital tract or urine culture, neonatal infection was highlighted in 73.9% of cases (p=0.0004). Most frequent pathogens were S. Agalactiae and E. Coli. Premature birth was present in 48.7% of the cases. Regarding perinatal risc factors need of reanimation at the delivery room (p=0.000), lower gestational age (p=0.046) and vaginal birth (p=0.003) showed satistically significant difference between groups. Ear culture swab showed a better tendency to positive culture than gastric aspirate (19.2% vs. 10.3%). **Conclusions:** Adequate pregnancy follow-up still needs improvings in our country. Identification of maternal and neonatal risk factors, maternal microbiological sampling, clinical and paraclinical picture of the newborn and microbiological culture help to detect in time neonatal infections.

Keywords: follow-up, screening, neonatal infections

SURGERY

OUR EXPERIENCE IN THE SURGICAL TREATMENT OF GASTROINTESTINAL STROMAL TUMORS

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Background: Gastrointestinal stromal tumor (GIST) is the most common mesenchymal tumor of the gastrointestinal tract. GIST starts in very early forms of a special nerve cells with pacemaker potentials called the interstitial cells of Cajal (ICCs) found in the myenteric plexus of the digestive tract. The term of GIST was first used in 1983 by Mazur and Clark to define a heterogeneous group of gastrointestinal non-epithelial neoplasms. Gastrointestinal stromal tumors show malignant behavior, such as peritoneal dissemination or hematogenous metastasis. **Material and methods:** We analyzed 12 cases of GISTs operated in our clinic between 2002 and 2023 depending on the establishment of the diagnosis, location, investigations, surgical treatment, evolution, recurrence (postoperative). The diagnosis and tumor stage was postoperatively established by immunohistopathological examination **Results:** Gastric localization was found in 7 cases, 3 cases of jejunal tumors, one rectal and one case of extradigestive GIST. Regarding surgical treatment we had 8 open surgeries and 3 laparoscopic. The postoperative evolution in 5 cases was unfavorable, with the appearance of hepatic, subcutaneous and peritoneal metastases. **Conclusions:** GIST represents a rare category of gastrointestinal tumors, with malignant potential; the diagnosis is confirmed especially postoperatively based on the histopathological and immunohistochemical examination. The preoperative diagnosis can be established by echo-endoscopic biopsy. The treatment is multidisciplinary, surgical and oncological. The surgical treatment can be performed by open or laparoscopic method, but it must be organoprotective.

Keywords: Gastrointestinal stromal tumor, surgical treatment, metastases

UROLOGY

USE OF ARTIFICIAL INTELLIGENCE FOR ANALYSIS OF PD-L1 (PROGRAMMED DEATH LIGAND 1) IMMUNOHISTOCHEMICAL EXPRESSION IN UROTHELIAL CARCINOMAS OF THE BLADDER: INITIAL PREPARATIONS

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Background: Immunohistochemical PD-L1 expression is a compulsory step for initiation of immunotherapy in locally-advanced or metastatic bladder cancer patients that are unfit for standard cisplatin-based chemotherapy. The development of artificial-intelligence-based software for histopathological interpretation offered pathologists a new tool for assessing PD-L1 status using immunohistochemical stains. **Material and methods:** We performed a systematical review of the literature concerning the use of different PD-L1 clones for immunohistochemical staining in muscle-invasive urothelial carcinomas of the bladder as well as on the deployment of the QuPath open source software for interpretation of immunohistochemical stains. For calibration of the software, a previously-stained PD-L1 case was scanned and used for initial assessment. **Results:** Initial analysis showed that the software is capable of identifying and counting PD-L1 positive cells throughout a region of interest. However, the inclusion of both tumor and immune cells in the same count was unsuitable for correct interpretation. Thus a "learning" session was performed for the software to distinguish between tumor and immune cells and quantify them separately. This was done by delineation of consecutive regions of interest and manual insertion of parameters for both sets of cells. The selected case was scored as positive in both manual and automatic interpretation. **Conclusions:** Use of artificial intelligence-based software for interpretation of PD-L1 immunohistochemical stains is fesible, accesible and has a real potential for use in both diagnostic and research purposes. This work was supported by the University of Medicine, Pharmacy, Science and Technology "George Emil Palade" of Târgu Mureş Research Grant number 164/22 /10.01.2023

Keywords: urothelial carcinoma, PD-L1, artificial intelligence, software, interpretation

TRANSURETHRAL RESECTION OF PROSTATE FOR BENIGN PROSTATE HYPERPLASIA ASSOCIATED WITH UNDERACTIVE DETRUSOR

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Background: Although detrusor underactivity is considered a poor predictor of outcome after TURP, however some authors have reported the beneficial results of TURP in patients with LUTS, BPH and associated underactive detrusor **Material and methods:** We present a case of a 62-year-old patient who was admitted in our Clinic complaining of dysuria, pollakiuria, abdominal straining during micturition, feeling of incomplete bladder emptying, having an insidious onset 2 years ago which did not improve after conservative alpha blocker treatment. History of diabetes type II for about 10 years under treatment with oral antidiabetics, peripheral neuropathy diagnosed 1 year ago. Abdominal ultrasound revealed the prostate size of 30 cm cubs, inconstant PVR between 100-200 ml. DRE revealed painless on prostate palpation, smooth, well-defined surface. PSA value was 1.20 ng/ml, uroculture was sterile, blood glucose was 130 mg/dl, IPSS score was 24. Uroflowmetry revealed an interrupted flow rate curve, Qmax = 7 ml/s, PVR=150 ml (under alpha-blocker treatment). Pressure-flow study result highlighted the low detrusor pressure in the voiding phase, the presence of PVR and BCI value of 58. **Results:** The patient was informed about the therapeuticpossibilities, including the alternative of performing TUR P, as well as about the possible postoperative complications and thepossible evolution in the absence of the surgical treatment and TUR P was practiced. The postoperative evolution of the patientwas favorable, he presented spontaneous micturition after the suppression of the bladder catheter, the symptomatology was improved, postoperative IPSS value was 10. The result of the uroflowmetry revealed an improved Q max value, a decrease of PVR quantity. **Conclusions:** TURP should be considered a viable treatment option in men with enlarged prostate and underactive detrusor who had poor response to medical treatment. Preoperative counseling and postoperative follow-up are very important in the management of these patients.

Keywords: urodynamics, underactive detrusor, urinary retention, BPH

LAPAROSCOPIC PIELOPLASTY FOR RECIDIVANT URETEROPELVIC JUNCTION OBSTRUCTION AND SECONDARY LITHIASIS AFTER OPEN PIELOPLASTY

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Background: The indications for laparoscopic pyeloplasty include any age patient with any anatomic abnormality who has documented ureteropelvic junction obstruction. Failed endopyelotomy, failed open pyeloplasty, failed laparoscopic pyeloplasty, crossing vessels or the presence of kidney stones can complicate the surgical intervention through more difficult preparation of the tissues, increased risk of bleeding or compromising postoperative healing. **Material and methods:** This presentation is a case report of a 28-year old male patient diagnosed with recidivant left ureteropelvic junction obstruction and pelvic stone who was admittedin our clinic accusing intermittent left lumbar pain for more than 6 months. History of left pyeloplasty in 2014, multiple leftflexible ureteroscopy for kidney stones. Preoperative blood results within normal values and the global renal function was normal. Ultrasound and CT revealed third degree of hydronephrosis, ureteropelvic junction obstruction and a pelvic stone image of 3x2 cm on the left kidney. **Results:** We performed laparoscopic transperitoneal dismembered Hynes-Anderson pyeloplasty with stone extraction and double "J" ureteral catheter insertion. Operating time was 210 min. There were no intra or postoperative incidents. After the surgery the patient was asymptomatic, with minimal drainage and the lumbar drain was removed on the 3rd postoperative day. The bladder catheter was removed on the 4th day and the patient was discharged on the same day. The ureteral catheter was removed after four weeks and the patient did not report any symptoms. **Conclusions:** Laparoscopic pyeloplasty has evolved into a new standard of care for the treatment of ureteropelvic junction obstruction. This approach is favored over endopyelotomy or open surgery becouse complex reconstruction can be performed, even in the presence of postoperative scar tissue, local inflammatory syndrome, kidney lithiasis or aberrant crossing vessels.

Keywords: laparoscopy, ureteropelvic junction obstruction, hydronephrosis

FUNCTIONAL RESULTS AFTER LAPAROSCOPIC RADICAL PROSTATECTOMY

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Background: Urinary continence after the treatment of prostate cancer in an important concern for patients and clinicians and must be discussed with the patient before the surgical intervention. Urinary incontinence affects the patient's quality of life and the laparoscopic approach can be effective in preserving the continence. **Material and methods:** This presentation is a case report of a 69-year old male patient diagnosed with prostate cancer cT2cN0M0. Preoperative prostate biopsy reveals bilateral prostate adenocarcinoma Gleason score 3 + 3 = 6 on right lobe and left lobe Gleason score 3 + 4 = 7. PSA = 7,61 ng / ml, Prostate volume was 30 cm cubs, IPSS=8. Preoperative uroflowmetry: obstructed aspect of the curve, Qmax=14 ml/s without post-void residual urine. We performed properitoneal laparoscopic radical prostatectomy with pelvic lymph node dissection **Results:** Operating time was 95 min, intraoperative blood loss was 50 ml and there were no intra- or postoperative complications. The drain tube was suppressed 3th postoperative day and the bladder catheter on 5 th postoperative day after cystography was performed. The patient was discharged on the 6th postoperative day having spontaneous micturition without loss of urine. Postoperative uroflowmetry-normal bladder capacity, normal peak flow-rate value of 19 ml/s without post-void residual urine. Postoperative histopathological result: bilateral prostate adenocarcinoma, Gleason score 3+4=7, grade group 2 stage pT3aN0R0, focally exceeds the right posterior-lateral prostate capsula, high-grade prostatic intraepithelial neoplasia HG-PIN, 15 lymph nodes without tumor metastases. **Conclusions:** The laparoscopic/robotic surgical approach is a minimally invasive technique, which offers the possibility of a fine and precise dissection of the tissues, the preservation of the greatest possible length of the urethra, the preservation of the bladder neck, which are important factors in performing an efficient urethrovesical anastomosis and preservation/recovery of postoperative continence.

Keywords: laparoscopy, prostate cancer, urinary incontinence

LAPAROSCOPIC RADICAL NEPHRECTOMY FOR VOLUMINOUS LEFT KIDNEY TUMOR

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Background: For patients with clinically localized renal cell carcinoma, surgery provides the best opportunity for cure. The role of laparoscopy for large primary tumors is not clearly established and the "limits" concerning the surgical approach are related with the lack of perirenal space, the difficulty in locating and preparing the elements of the renal pedicle, as well as due to the increased risk of intraoperative complications **Material and methods:** This presentation is a case report of a 58-year old male who was admitted in the Urology Clinic from Targu Mures complaining of left lumbar pain, macroscopic hematuria with an onset of approximately 1 months. BMI= 23,1 (G=75 kg, H=180). Preoperative blood results within normal values. Abdominal ultrasound and computed tomography revealed a tumor masse on the left kidney of 14x12x12 cm, without lymph node or distant metastases. **Results:** We performed transperitoneal laparoscopic left radical nephrectomy. Operating time was 50 min. We did not have significant intraoperative incidents. The blood loos was minimal (50 ml). The patient's evolution was favorable with the resumption of intestinal transit on the 1st postoperative day. The drain tube was suppresed the 2nd postoperative day and the patient was discharged on the 4th postoperative day. **Conclusions:** Laparoscopy in large tumors has multiple advantages, such as a smaller scar, better visualization of the hilar vessels, negligible blood loss, perioperative morbidity and the operating time is comparable to open nephrectomy. Laparoscopic nephrectomy in large renal tumors can be safely performed in skilled hands having a reduced postoperative pain, decreased time of hospitalization and convalescence.

Keywords: laparoscopy, kidney tumor, limits

SCIENCE AND TECHNOLOGY

FINANCE

INNOVATIVE FINANCE INSTRUMENTS FOR THE BLUE AND GREEN ECONOMIES - A QUALITATIVE RESEARCH

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Background: Background: The blue and green economy represents a very modern topic of scientific debate, particularly for financing development and specifically regarding the innovative finance instruments to stimulate actions for financial solutions and sustainability, in the aftermath of the Covid-19 financial shock. The study represents a continuation of the author`s approach of a future model to generate new financial sources for development, to obtain greater financial sustainability at the national level, and reveals several financial innovative instruments and mechanisms more results-oriented in the practice of European companies and states on the financial markets, with focus on the green economy projects. **Material and methods:** The goal is to find innovative finance instruments to deepen the effectiveness and efficiency of development finance. The study conducts a systematic review of the recent (2020-2023) international scientific literature about labelled bonds, to compare their mechanism, advantages, and disadvantages, for a more efficient and results-oriented model aligned to the sustainability goal. The study finds and compares several labelled bonds, e.g., green bonds, blue bonds, social bonds, and transition and sustainability-linked bonds, and emphasizes the important role financial (debt) markets can play in funding and uplifting companies to contribute to global financial sustainability. **Results:** We found that several innovative financing instruments are already being used by companies abroad, and others are currently being prepared. The study has identified and compared ten different labelled bonds, i.e., green bonds, blue bonds, social bonds, and transition and sustainability-linked bonds, presented in scientific papers recently published (2020-2023), and analyzed them on the efficiency and efficacity criteria. **Conclusions**: The innovative finance instruments represent a valuable solution to deepen the effectiveness and the efficiency of development finance, for a more results-oriented model, aligned to the sustainability goal, and can have a wide application for the companies involved in the blue and green economy.

Keywords: Innovative Finance Instruments, Financial Sustainability, Financial Debt Market, Labelled Bonds

ASSESING THE CHARACTERISTICS RELATED TO A PROTENTIAL FRAUDULENT REPORTING PROFILE THROUGH A CRITICAL REVIEW OF PROFITS REPORTED BY LISTED COMPANIES

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Background: Poor quality in profits may be regarded as a red flag for any potential fraudulent financial reporting. Sherman et al. (2003) based some relevant conclusions on the subject of spotting and surviving acounting landmines mainly by addressing signals of earnings management, such as revenue recognition, provisions for uncertain future costs, or related-party transactions. Therefore, the quality of profits reported by issuers listed on a stock exchange must be assessed skeptically whenever the dividend policy is taken into account as a relevant factor to justify the investment decision. We acknowledge the quality of profits as a majorcondition for strong cash flows from operations in order to ensure an issuer's sustainable capability for dividend disbursement. Weare mainly concerned regarding the correlation between EBITDA and operating cash flows. Our reasonable assumption is that anormal analytical relationship requires both indicators to sustain either positive or negative values, highly correlated. Any abnormal condition, such as significant different positive and negative values, may be regarded as a red fleg for potential earningsmanagement that investors should stay alert to. We conduct our research on different samples of issuers listed on BSE regulatedmarket and AeRO MTF, targeting industries or behaviors associated with medium-high risks of fraudulent financial reporting, suchas lack of transparency or defficiencies in corporate governance practices. We expect our results to provide a reasonable basis ofconclusions that may contribute to investors' enhancement of their abilities to better judge an investment decision in traded stock,beyond any publicly stated dividend policy.

Keywords: dividend policy, sustainable financial reporting, earnings management, EBITDA cash flows correlation, corporate governance

LAW

CIVIL LIABILITY IN BUSINESS

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Background: The diversity of commercial operations in the context of contemporary society determines a new dimension of the business world and therefore a different approach to the legal resources involved. In this context, there is a specialisation of the civil liability of the professional, based on the need to ensure effective and efficient protection of the victims of unlawful acts, from the moment of anticipation of the danger of damage to the full compensation. The civil liability of the professional trader is an aggravated one, motivated by skill, information and knowledge, which is related to special assessment criteria. In the present study we intend to summarize the main rules for the successful implementation of the action for civil liability in business, trying to capture its particularities, legal regime, but also the orientation of judicial practice in the field.With regard to the research methods and tools used, starting from the guidelines of civil liability, we sought to identify the doctrinal and jurisprudential guidelines.We concluded our study by highlighting the practical importance of the legal institution analysed, pointing out the interest of theoreticians, but especially of practitioners in the field, given its frequent invocation in the resolution of the cases brought to trial.

Keywords: business, professional, liability

ANALYSIS OF JUDICIAL PRACTICE. THE ACTION IN VALIDATING THE PROMISE OF SALE-PURCHASE OF A PROPERTY

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Background: The premise of the modest approach of the present study is the settlement of a dispute by the courts regarding the validation of a promise to sell-purchase a property, but which presents a series of particularities that arouse extensive discussions. We tried to capture the most comprehensive analysis of the logical-legal reasoning undertaken by the courts that intervened in the various procedural cycles through which the litigation went, also outlining a series of comments in relation to the doctrinal guidelines.With regard to the research methods and tools used, starting from the principles and guidelines of the legal institution of the action of validation the preliminary contract for the sale and purchase of a property, we aimed to identify as many decisions as possible from judicial practice in which they were faced similar problems, but also to establish a series of benchmarks in the specialized literature.Through the conclusions we formulated regarding the entire work, we tried to signal the practical importance of the legal institution and the need to analyze it from a double perspective - the doctrinal and the jurisprudential one, which turn out to be relatively different.

Keywords: judicial practice, preliminary contract of sale-purchase, mandate contract

TRANSPOSITION IN ROMANIA OF DIRECTIVE (EU) 2019/771 BY EMERGENCY ORDINANCE NO. 140/2021 ON CERTAIN ASPECTS RELATED TO CONTRACTS FOR THE SALE OF GOODS

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Background: The paper discusses the Romanian transposition of Directive (EU) 2019/771 into the domestic legislation through the Emergency Ordinance No. 140/2021, by taking over the provisions of the European directive, but also by inserting additional provisions that have the role to ensure, within the margins of freedom conferred by the Directive, an effective protection of the consumer's rights. The study is structured around the following topics: terminological clarifications, the sale contract, the responsibilities of the seller and remedies for non-conformity.The innovative element of the normative act under analysis is the clarifications regarding the conformity of goods in general, content and digital services circulated on the market, in particular. The topic is of major interest if we consider that in the New Romanian Civil Code from 2011, which took over the provisions of the Napoleonian Civil Code from 1864 on the effects of the sale contract governed by Article 1672, distinguishes between the seller's liability for hidden defects defined by Article 1707 and his obligation to deliver the goods sold, taking the model from Article 1690 C.civ. fr., where the warranty against defects provided by Article 1.641 et seq. C. civil fr. is distinct from contract conform delivery. We note that the transposition of the European directive into the Romanian law supposes a paradigm shift, by adopting a monistic, more flexible, more dynamic approach, in which the obligation of compliant delivery and the guarantee against hidden defects must be subordinated to a common terminology: the obligation (guarantee) of conformity.

Keywords: contract de vânzare de bunuri, consumator, obligatia de conformitate

ROMANIA BEFORE THE EUROPEAN COURT OF JUSTICE FROM THE PERSPECTIVE OF SUSTAINABLE DEVELOPMENT

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Background: Once a EU member-state, Romania has made a series of legal commitments in this new capacity, one of which being that of alignment with the European standards set by the primary and secondary European legislation in the field of environmental protection and sustainable development, a commitment that all EU member state have made. How serious has Romania been in pursuing and fulfilling these commitments is the main goal of our present research. Can we consider the legal actions brought against Romania on issues pertaining to sustainability and environmental protection proper instruments for making progress in these areas or are they simply ways of holding Romania accountable under European law? Trying to find answer to these two questions, we will analyze the relevant jurisprudence of the ECJ as well as the European and national legislation.

Keywords: Sustainable development, European legislation, Infringement, Accountability, Commitments

ISSUES RELATING TO HOUSE ARREST WITH USE OF "ANKLE MONITOR"

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Background: The "Ankle Monitor"(electronic bracelet) is a device placed on the detainee's ankle or wrist, capable, by transmitting radio pulses, to report in real time to the operations center the exit of the person to whom it applies and in case of an alarm, the responsible authority is notified and performs a control in the territory. In Romania, by Law no. 146/2021 (Law no. 146 of 17 May 2021 on electronic monitoring in criminal judicial and enforcement proceedings, published in M. Of. no. 515 of May 18, 2021) the establishment was regulated, organization and operation of the Electronic Monitoring Computer System as well as the use of electronic surveillance devices and the mode of action in case of generating alerts.They started to be used in Romania only from October 1, 2022, and until 2024, these bracelets are available only for Bucharest and the counties of Iași, Mureș and Vrancea, as a pilot project. In the Italian system they have been used for a long time; by law no. 4 of January 19, 2001, the possibility of ensuring the electronic monitoring of the subjects arrested at home or in the execution of the sentence at home was introduced, in order to waive the police controls (pursuant to art. 275 bis Code of criminal procedure and art. 47-ter para. 4 law 354/75). Therefore, their practical advantages and disadvantages have so far been identified, beyond purely theoretical discussions. Where the legislation was incomplete, the jurisprudence or doctrine intervened, therefore their analysis and taking over the ideas presents an advantage for the implementation of the system in Romania, avoiding the creation of legislative gaps.

Keywords: Ankle Monitor, electronic monitoring, home arrest, execution of the sentence at home, comparative law

THEORETICAL PREMISES FOR SUBSTANTIATING THE RIGHT TO FREE ACCESS TO THE INTERNET AS A CONSTITUTIONAL RIGHT OR GUARANTEE.

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Background: A recent social reality (the Covid-19 pandemic) has strongly affected the state's ability to respond to society's needs, moving to a forced digitization of state institutions and a transfer of state activities into the online. The solution is salutary and perhaps necessary beyond any contestation, but we believe that this premise gives rise to the following legal controversy: are these constitutional measures from the perspective of conditioning the actual exercise of certain rights on the access to the Internet of the beneficiary of the rights manifested? Specifically, by way of example, although education is deemed to be free and provided by the state, it was carried out for a period of more than a year, exclusively in the online environment. The question arises, did people from disadvantaged backgrounds who did not have access to the necessary technology or the Internet benefit from this right? The question can be extended to other fundamental rights affected. Through this article we want to investigate whether the social premises, the institutional experiences (with an emphasis on the education system) justify the need to adopt at the legislative level additional guarantees capable of correcting the discrimination given by the conditionality of Internet access for the exercise of fundamental rights. Specifically, we want to answer the following question: is the state obliged to ensure citizens access to the Internet when the exercise of fundamental rights is conditioned by this premise?

Keywords: fundamental rights, constitutional quarantee, access to internet, new rights

PRACTICAL APPLICATIONS OF THE PRESIDENTIAL ORDINANCE INSTITUTION

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Background: Society, in the context of the accelerated development of technology, is today experiencing rapid amplification and diversity. This development is found in almost all areas of activity, leading to a multiplication of social relations. In this context, in the field of law, different institutions develop a greater appreciation from the population, in the context in which they succeed, by their usefulness to resolve various disputes quickly and efficiently. As regards the presidential order, we consider that the versatility of that institution is, perhaps, best highlighted by analyzing the vast field of applicability.Thus, through this study we aim to analyze in an interdisciplinary way the applicability of the presidential ordinance in different branches of law and as a result to emphasize the usefulness of this procedure. We will therefore find that, in addition to applicability in civil law, in civil procedural law, it finds its usefulness in other branches of law, such as administrative litigation, in the field of insolvency law, relations between professionals, as well as in many other situations.However, the complexity and diversity of the assumptions in which the presidential ordinance procedure can be used, we consider that it makes it extremely difficult, if not an exhaustive look at all situations in which we can demonstrate the usefulness of the presidential ordinance. Consequently, the areas that are of the most frequent application will be analyzed as a matter of priority, without, however, omitting the other areas of applicability.

Keywords: presidential ordinance, field of applicability, versatile character, interdisciplinarity, areas of law

CYBER FRAUD IN THE AGE OF NEW DIGITAL TECHNOLOGIES

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Background: The digital transition and the development of new technologies have substantially altered the cyber threat landscape, contributing both to the sophistication and growth of digital crime and to the emergence of new forms of cybercrime. Within this framework, online fraud continues to be one of the most dynamic and prolific cybercrimes. Technological progress has, on the one hand, contributed to the diversification and sophistication of the tools used by cyber criminals to commit cyber fraud, while the vulnerabilities of Internet of Things, Blockchain, Cloud Computing, Big Data or Artificial Intelligence environments and technologies have led to the expansion of the attack surface, going beyond the traditional forms of committing these types of crimes. Current dynamics and trends in cyber fraud create difficulties in preventing this criminal behaviour, as traditional security mechanisms are no longer sufficient and effective in protecting systems against new threats in the digital space. The existing legal framework and bodies responsible for cyber security often do not keep pace with developments in cybercrime. Scientific research aims to understand the trends and dynamics of cyber fraud (identifying new types of cyber threats and how they evolve, identifying possible gaps and vulnerabilities in the cyber security infrastructure, triggers and motivation of cyber actors leading to an increase or decrease in this criminal behaviour). Understanding the cyber fraud algorithm can improve the overall understanding of the phenomenon and help develop more effective legal solutions and share best practices for preventing and combating cyber fraud.

Keywords: cybercrime, cyber fraud, new technologies

CLIMATE GOVERNANCE IN THE TECHNOLOGICAL CONTEXT

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Background: Climate governance is a concept belonging to environmental policy, which indicates the set of mechanisms and measures aimed at focusing social systems towards preventing and mitigating the risks of climate change. Presupposing an effective management of the global climate system, embodied in collective mechanisms able of effectively governing its impact, globalclimate governance is based on mitigation, adaptation and means of implementation. Although climate policies have achieved an international inertia over time, the lack of a legally binding global climate regime and the delay in acting quickly and concretely have generated the so-called climate bubble. Global climate governance now knows a new era, the one imposed by the need to incorporate factors that hold the driving force in its evolution, such as technological innovation and business actors in climate governance.

Keywords: climate governance, ecosystems, environmental policy, technological innovation., climate change

A RADIOGRAPH IMAGE OF THE CIVIL TRIAL FROM DIGITAL PERSPECTIVE VIEW

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Background: The idea of implementing some electronic means of conducting the civil trial is no longer a novelty or a desire, but a reality to which the legislator and the courts must find solutions.The paper will take into discussion the issue of conducting the civil judicial procedure in the electronic space from the perspective of ensuring its speed and free access to justice, but also will try to identify how the courts were receptive to the new digital environment, from a theoretical and practical perspective.The implementation and application of new technologies, designed as mechanisms to support the reform of the judicial system, aim to provide a greater degree of predictability, transparency and efficiency of the judicial procedure.The interaction between electronic instruments and the civil trial is manifested on several grounds, such as the use of the electronic file, the communication of procedural documents by electronic means, the holding of the court session by videoconference, accessing the solutions of the courts through the justice portal, the use of computer applications for audio conversion in editable documents, avoiding a non-unitary jurisprudence by creating the possibility of access to the decisions of other courts pronounced in similar cases, etc.Ultimately, the development of the range of digital benefits leads to a reinterpretation of the principles of free access to justice and the reasonable term, becoming a necessity to adapt to the changes of the present.

Keywords: digitization, judicial procedure, civil trial, access to justice, electronic file

FORCED EXECUTION IN ROMANIA OF AN ENFORCEABLE TITLE ISSUED ON THE BASIS OF REGULATION NO. 1111/JUNE 25, 2019 ON JURISDICTION, RECOGNITION AND ENFORCEMENT OF DECISIONS IN MATRIMONIAL MATTERS AND IN THE MATTER OF PARENTAL RESPONSIBILITY AND INTERNATIONAL CHILD ABDUCTION

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Background: The article deals with the procedure by which the enforceable titles issued by the courts of the member states of the European Union based on Regulation no. 1111/25-June-2019 regarding competence, recognition and execution of judgments in matrimonial matters and in the matter of parental responsibility and international child abduction. In the Romanian context, the forced execution of these titles is carried out without an additional exequatur procedure, i.e. without the need of a new judicial decision to recognize the title. The detailed procedure to be followed in Romania is analyzed, starting with the submission of the title to a competent authority, respectively to a bailiff. The specific conditions that the enforceable title must meet in order to be considered valid and applicable in Romania are also analyzed. The cases in which enforcement can be refused are also presented, for example, if it is contrary to public order in Romania or if there is a contradictory judicial procedure in progress. In addition, the practical implications of this regulation for EU citizens who live or carry out activities in Romania are also clarified, thus providing a perspective on European judicial integration and on the freedom of circulation of judicial decisions within the common legal space. The article emphasizes the importance of this procedure in the context of judicial cooperation in civil matters at the EU level and reaffirms Romania's commitment to ensure an efficient and correct application of European regulations within its national legal system.

Keywords: execution of decisions in matrimonial matters, execution of decisions in the matter of parental r, execution of decisions in the matter of internatio, recognition of decisions, approval of execution

ENFORCEMENT OF JUDGMENTS IN ADMINISTRATIVE LITIGATION

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Background: Settlement of litigations concerning disputes relating to the protection of subjective rights or legitimate interests infringed by a public authority, or the refusal to issue an administrative act in close connection with its activity, are subject to administrative litigation. The final court decision on administrative litigation may be enforced by a special procedure, derogating from the matter of enforcement regulated by the Code of Civil Procedure. Its purpose is to ensure that situations in which these judgments are not enforced voluntarily are resolved, simultaneously with the pecuniary sanctioning of those who are responsible for not enforcing these types of decisions, within the legal term provided by law no. 554/2004.

Keywords: administrative litigation, final decision, enforcement

LIGHT POLLUTION AND THE NEED FOR SKY PROTECTION

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Background: When we approach certain subjects we start from the conceptual aspects and the need to clarify them.Through the concept of light pollution, the necessary framework is provided to classify the adverse effects that the increase in the presence of artificial light causes on biological processes, ecosystems and biodiversity. When we use concept we refer to its scientific, technical and normative valences that carry an ethical meaning that indicate important and emerging problems affecting the biosphere. Light pollution is perceived as a type of atypical pollution, since artificial lighting involves solving some needs and problems related to confort and security, as well as, it contributes to the destruction of certain ecosystems. The rapidly growing problem of light pollution in the European Union threatens the priorities related to the protection of nature and environment, the protection of cultural heritage and energy efficiency. In the context in which the EU aims to achieve the ambitious objectives set out in the Biodiversity Strategy, the Climate Objectives Plan and the zero pollution Action Plan, light pollution must be perceived and recognized as a threat. There are member states that have taken political initiatives that provide an overview of the opportunities to address light pollution at the European level, and have initiated proposals for action in order to draw up a European policy document and recommended actions. In addressing the problems related to light pollution, we aim to show the importance of framing environmental problems due to artificial lighting as well as the the areas in which action must be taken.

Keywords: light pollution, climate change, environmental policy, technological innovation., artificial lighting

LAW AND PUBLIC ADMINISTRATION

CUMULATIVE PENSION AND STATE SALARY OR CHOOSING BETWEEN TWO FUNDAMENTAL RIGHTS?

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Background: By draft law no. 421/2021 Draft Law on some measures for the continuation of activity by persons who meet the conditions for retirement, the Romanian Government aimed to regulate the situation of older workers by capitalizing on their experience, even though the legal context prior to this draft limited, from the Government's perspective (Explanatory Memorandum of the draft law), the right to work for persons who wish to continue working, the law imposing the forced termination of employment or service relationships when the conditions for retirement are met. On the other hand, such a proposal would have led to the suspension of the right to payment of the pension for the duration of continued employment and salary accrual, thus ensuring a fair allocation of budgetary resources, given that the description of the budgetary impact of such a regulation mentions it: There is no financial impact on the consolidated budget. The Constitutional Court of Romania analysed this draft in the context of the constitutionality review carried out prior to the promulgation of the law and concluded that: 'In essence, the contested provisions make the right to a pension conditional on the non-exercise of the right to work, limiting it to the point of annihilation'. However, the Court held that the exclusion or limitation of a fundamental right/freedom no longer reflects a question of proportionality, but one of elimination of a fundamental value in the State. The Court also found that making the exercise of the right to work conditional on the non-exercise of the right to a pension is tantamount to excluding a socio-economic category from the possibility of holding a post in the public sector, which is inadmissible.

Keywords: law, constitutional court, fundamental rights, salary, discrimination

THE TAXATION OF THE DIGITAL ACTIVITIES

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Background: It is obvious that digitization has become a very important aspect for many fields of activity. For certain areas it can be - or should be - considered essential. And the field of public finances must be included in this category, motivated by several considerations such as: digitization would contribute significantly to increasing the degree of collection of fiscal obligations (it is known that regarding this aspect Romania is facing a worrying situation); the need to keep up with the fulminant increase in the degree of digitization of the economic-social sector (the activity of online marketing, including the production of goods and services is in an upward trend); and, last but not least, the need to tax the new areas of activity or the results of these activities not yet covered by the state's right to impose (new types of activity, exclusively digital, generating added value). And the issue of digital taxation (of the digital economy) has become an important issue also for the European Union. Effective and urgent adaptation of taxation to the realities of the digital economy has become essential. The European Union has proposed to act, including legislatively, on two levels: a reform of corporate taxation rules, so that profit is registered and taxed where companies have a substantial digital interaction with users, and to propose of taxing the revenues from digital services (outline of a provisional tax called digital services tax). Now, also the G20 and the Organization for Co-operation and Development (OECD) are coordinating discussions on digital taxation at the international level to reach a consensus on a global long-term solution (BEPS). The first step was taken by the adoption by the OECD/G20 Inclusive Framework on 14 December 2021 of a set of OECD model rules called "Tax challenges generated by the digitalization of the economy - global model rules to combat tax base erosion", a document assumed by all Member States.

Keywords: digitalization, taxation, digital services, digital economy, tax on digital services

NEW TRENDS IN HUMANITIES

PSYCHOLOGICAL INFLUENCES ON EUROPEAN CITIZENS AMIDST THE PANDEMIC, HYBRID WARFARE, AND DISINFORMATION

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Background: In recent years, the European Union has grappled with a sequence of unprecedented events that have deeply affected its citizens: the global pandemic, the hybrid warfare at its borders (Russia - Ukraine) and its extension to other military conflict zones (Israel, Armenia, Azerbaijan, Serbia, among others), simultaneously with the relentless onslaught of disinformation and fake news in public communication, and consecutive economic downturns. In this setting, it is both pertinent and apt to examine the psychological influences of these events on European citizens by combining empirical data, insights from the field of communication, the actual progression of events, and public policies, correlated to an in-depth theoretical study. The findings unequivocally point to a marked rise in the levels of stress, anxiety, depressive behaviour, and polarisation within European societies. Moreover, a baffling alteration in civic behaviour is observed, with increased scepticism towards institutions, and a heightened susceptibility to disinformation. Concurrently, there is amplification in the audience and the hazardous influences of extremist, anti-system, anarchistic political and ideological stances, along with societal tensions, underpinned by a surge in Euroscepticism. An integrated inquiry regarding these manifestations and the intricate challenges of the current era holds the potential to proffer recommendations for communication strategies, psychosocial interventions, and advantageous, remedial public policies. In this regard, we embrace a tangible, documented outlook on how global occurrences shape individual and collective psychology in contemporary Europe, seeking possible solutions and suggesting potentially beneficial public policies.

Keywords: European Union, hybrid warfare, crises, disinformation, psychosocial effects

CONTINUOUS TRAINING - A PREREQUISITE FOR PROFESSIONALISATION OF TEACHING CAREERS

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Background: Change, dynamics, challenges - these are the main characteristics of contemporary society. Therefore, as an integral part of the social system, the education subsystem is strongly shaped by these dynamics. In addition, the Romanian school is undergoing a profound process of optimization through reform and innovation processes, both in terms of curricular paradigms and teaching strategies, evaluation strategies and the human resources involved. Thus, we believe that the success of educational reforms depends, implicitly, on one of the most important variables, which is the human resource directly involved in the instructional-educational processes, namely teachers. The teaching profession has remained one of the noblest, but at the same time it has become one of the most complex professions, and the current context generates more varied expectations, launching new challenges for the school institution, for teachers. The economy, politics, society, and culture are undergoing changes that have a direct and significant impact on schools and the professional roles of educators. Today's teachers take on more complex roles, which are very different from traditional ones, and work with pupils who are unique in terms of their individual characteristics, individual potential, cultural status and educational needs. Until recently, teacher training was seen as a period of initial preparation - sufficient for the future teacher to be able to work until the end of his or her career. Today, however, it is seen as a more complex, more flexible approach to the ongoing education of teachers, which involves a variety of approaches to analysis, synthesis, transfer and problem-solving in a modern, interactive sense.

Keywords: teacher, training, didactic career, European competences

WORDS THAT HEAL – THE ROLE OF POSITIVE LANGUAGE IN COMMUNICATING WITH YOUNG PEOPLE WITH OBESITY AND EATING DISORDERS

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Background: Communication with adolescents, complicated by age-specific insecurities and sensitivity, factors related to body shame, low self-esteem and dissatisfaction, and weight stigma, is vital for early identification of eating disorders, effective management of obesity, and provision of timely emotional and medical support. The current presentation reviews the research and practical applications of communicating with patients suffering from obesity and eating disorders, developed through the Connected4Health project (https://connected4health.pixel-online.org/index.php). The key research question targeting communication targeted the challenges and stumbling blocks versus elements of positive communication, non-stigmatizing and neutral semantics in communicating with young people with obesity and eating disorders. Method: The review of empirical studies and theoretical frameworks on communication was followed by interviews with international and local specialists and practical applications in the form of doctor-patient interviews and peer dialogue simulations, meant to illustrate the identified strategies. Results: For the former theoretical results, a Handbook entitled Cultural and Historical Perspectives on Body Image, Obesity, and Eating Disorders was published (https://librarie.umfst.ro/ebooks) The handbook includes local reports that demonstrate, among others, that attitudes towards people with obesity and eating disorders can be expressed linguistically through neutral terms, euphemisms or invectives, of which the last perpetuate negative bias. Interviews with specialists in communication in the form of YouTube video clips identified positive strategies for approaching teenagers (https://youtu.be/LIkYkz8Qcd8; https://youtu.be/UHBfNgBGxF4) while doctor-patient interviews (https://youtu.be/kCD9SZM2kb8) and peer communication simulations (https://youtu.be/fIQN_x8m7hU) offered possible illustrations of non-stigmatising alternatives that "heal", positive semantics vocabulary likely to help teenagers feel more confident and motivated to discuss obesity and anorexia and make health-behaviour changes.

Keywords: doctor-patient communication, positive language, teenagers, obesity, eating disorders

"ELENA FERRANTE'S 'MY BRILLIANT FRIEND': A LITERARY AND CULTURAL ANTHROPOLOGICAL EXPLORATION OF FRIENDSHIP AND IDENTITY IN POST-WAR NAPLES"

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Background: Elena Ferrante's renowned novel, "My Brilliant Friend," offers a compelling lens through which to examine the intricate web of cultural and social dynamics in post-World War II Naples, Italy. This literary and cultural anthropological analysis delves into Ferrante's masterful storytelling to uncover the nuances of friendship, identity, and community within a unique cultural context. By closely examining the novel's characters and their relationships, this study illuminates how Ferrante's narrative serves as a rich source for understanding the formation and transformation of personal and communal identities in the face of societal change. By merging the tools of literary analysis with the insights of cultural anthropology, this research sheds light on the enduring relevance of Ferrante's work in exploring the complexities of human connections and the influence of culture on individual lives.

Keywords: 1. Neapolitan Society, 2. Friendship Dynamics, 3. Gender Roles, 4. Education and Social Mobility, 5. Cultural Identity

URBAN NETWORKS AND LITERATURE. THE CASE OF THE ROMANIAN NOVEL

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Background: The pattern of the cities presented as a narrative framework, studied in the late 19th century and early 20th century Romanian literature, are reflections of urban networks created in Europe. We will analyse the nodes of this network, but also of the hierarchies created vertically, from urban centres such as Budapest, Paris, or Vienna, to secondary cities, belonging to the peripheries, such as the Romanian space. The city as a support for the narrative scenario has played a cardinal role in the construction of fiction, proposing different visions that characterized the multitude of cultural landmarks in Central and South-Eastern Europe and the links with cultural urban spaces. The essential thesis from which we start in building the approach in this study proposes, therefore, the creation of a model through which we demonstrate that the evolution of European knowledge was made in direct connection with that of the development of urbanism, aspects reflected in literature. In such a model, applied to medieval Asia, Stephen Murillo demonstrated that cities are at the intersection of two large structures: networks and hierarchies, and their position depends on belonging to one of the two. In Romanian literature, especially in the novel, we could perceive a whole network of characters who travel, take part in and discuss the relation with foreignness and the national space.

Keywords: city, network, Romanian novel, narrative, geocriticism

THE PROSE OF THE GENERATION 2000. TYPOLOGIES, DIRECTIONS, CONTEXTS

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Background: The writers of the 2000 generation mainly cultivate the space of the urban marginality, the insertion insertion into the world of everyday life, dominated by the present, ignoring the past, in line with some socio-economic realities of post-communist Romania in the early 2000s (economic and social crisis, the interminable "transition", the persistence of the old communist structures, poverty, unemployment, absence of future prospects). The Romanian literature of the 2000s is becoming known as "miserabilism" (Ionuț Chiva, Ioana Baetica, Adrian Schiop, Dan Sociu, etc.), with young writers who are abulic, stuck in the stagnant present, prisoners of stereotypical, elementary gestures. The protagonists of this type of prose take refuge in a cynical, indifferent and hedonistic atmosphere, marked by anxiety and superficiality, the obsessive return to the present being a constant in post-communist prose. In contrast to opzecist prose, which is characterised by thematic continuity, obsessions, narrative lines, etc., the prose of the 2000s has the vocation of rupture, fragmentarism and discontinuity from previous literature.

Keywords: Prose, the 2000 generation, urban marginality, present, discontinuity

THE EVOLUTION OF CONJUNCTIVE ELEMENTS IN TIME CLAUSES

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Background: Our paper centres upon conjunctive elements (conjunctions, conjunctive phrase, relative adverbs) functioning in subordinate circumstantial clauses. We underline the competition among these linguistic means in different historical periods (beginning with the 16th century), their transformation and renewal, stylistic distribution etc. We offer a special attention to time clauses and their main values: simultaneity, anteriority and posteriority. The evolution of conjunctive elements is interesting by the fact that some of them do did not express different time relations in old Romanian language as they do nowadays; some completely disappeared or remained as regional, and some limited their time distribution from a syntactic and stylistic point of view.

Keywords: conjunctive elements, time clause, subordination, syntax

ESP SKILLS AND TECHNOLOGY LITERACY

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Background: This article explores ways of integrating technology into ESP teaching and proposes a model for adapting technologies (word processing applications, organizing and brainstorming data collection and analysis software, communication and collaboration software, instructional media, multimedia creation tools, instructional interactives database and reference resources) to the objectives of an ESP course. The main idea is that technology needs to be selected and tailored to the specifics of the ESP classes so that it enhances the teaching and learning process. At the same time, the students as end-users need to be given strategies so that they embrace technology and use it creatively in order to develop their language skills.

Keywords: ESP, technology, digital natives, communication skills, critical thinking

THE ROMAN FORTESS FROM POTAISSA/TURDA: ARCHAEOLOGY AND HERITAGE MANAGEMENT

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Background: The Roman fortress (castrum) from Potaissa/Turda represents one of the greatest ancient military constructions in Romania. The castrum itself was built between 168-172 AD after the Marcommanic Wars. It was used up towards to end of the 3rd century, when it was abandoned by the Roman troops. During the Middle Ages the abandoned buildings were used as a "stone quarry" for the churches and houses of the medieval city of Turda. Archaeological research begun in the first years of the 20th century, but long-term researches were conducted from the second half of the century. After the fall of communism, the archeological researched posed a few challenges in terms of funding and heritage management. Being a rather important site, the fortress became not only the object of many researches but, also object to some ambitious heritage management projects with more or less impact. The aim of this paper is to present not only the results of archeological researches but, also some interesting perspectives in terms of heritage management.

Keywords: Archaeology, Fortess, Roman, Turda, Heritage

COMMUNICATION ABOUT TEACHING STAFF IN MASS MEDIA AND ITS INFLUENCE ON THEIR SOCIAL IMAGE

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Background: Background: The Global Report 2021 on the Status of Teachers attempts to define the issue of teachers' status today and concludes that it is continuously eroded: governments and parts of the mass media clearly have low regard for teachers and education. Our paper examines how Romanian teachers perceive the social status of the teaching profession. Method: We have carried out a qualitative approach research study to analyze and interpret the points of view of 227 teachers from various regions of Romania. Results: Among other important factors, Romanian educators listed the influence of communication in the mass media and their portrayal as one of the elements that determine their position. We discovered that the answers obtained, which show that the social status of teachers is decreasing, and the prestige of the teaching profession has eroded, are consistent with the data of the official documents created by international bodies through the comparative analysis of the contents. In conclusion, the mass media and the governments would do well to outline a more favorable image of this social category.

Keywords: Teaching profession, communication, social image

THE JOY OF LITERACY: PRIMARY SCHOOL CHILDREN'S PERSPECTIVES ON READING

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Background: The pedagogical value of literature and storytelling has long been recognized in traditional contexts. The act of reading is associated with the acquisition of knowledge, the cultivation of emotional intelligence, and the enhancement of cognitive abilities. Parents and early childhood educators strive to foster a love of literature in young children through age-appropriate literature from an early stage. Children's literature provides a variety of language learning activities that effectively involve children, help them relate the narrative to their own personal experiences, and expand their vocabulary. Children are excited about and attracted to authentic language input drawn from well-selected works of children's literature, beginning with the early stages of kindergarten education and continuing through the latter stages of secondary school. This enthusiasm and fascination are evident throughout the children's educational journey.The present study explores the correlation between reading habits and attitudes towards reading among young learners. The proposed methodology involves a questionnaire to ascertain whether young learners actively participate in reading for enjoyment or regard it as a burdensome task. Furthermore, the primary aim of this research is to offer a thorough comprehension of the perspectives held by young individuals concerning the impact of literature on their own experiences.

Keywords: children's literature, primary school children, online questionnaire, reading for pleasure, early childhood literacy

METACOGNITIVE STRATEGIES TO IMPROVE CHILDREN'S READING COMPREHENSION IN EARLY GRADES

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Background: The aim of this study was to explore the effect of metacognitive strategies in improving the skills of reception and understanding of the written message through reading, within the Romanian Language and Literature classes, in 3th grade students. The quasi-experimental study was conducted in two randomly chosen rural classrooms, where students' academic performance was close. The experimental group (EG) consisted of 25 students, while the control group (CG) consisted of 22 students. The research/study results were analysed using independent t-test samples to determine whether there was a significant difference in written message reception and comprehension skills during the pretest and post-test for the two groups involved in the research. To analyze the effect of metacognitive strategies on the ability to receive and understand the written message, this study used SPSS analysis. In terms of reading comprehension skills, we found a significant difference in the results of students in the experimental and control groups, between pre-test and post-test. Therefore, these students progressed significantly in reading comprehension when using metacognitive strategies. The data analysis revealed that EG students improved their skills of receiving and understanding the written message by implementing metacognitive strategies practiced in the experimental stage.

Keywords: metacognitive strategies, reading comprehension, experimental study, reception and understanding of the written message, early grades

SHAPING THE NATION THROUGH PUBLIC MONUMENTS: A CASE STUDY OF GREATER ROMANIA

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Background: The end of the First World War marked the creation of Greater Romania through the incorporation of Transylvania, Bessarabia and Bukovina. While this period was undeniably a high point in Romanian history, it was also a period of great challenges brought by the process of putting together areas with different histories and cultural backgrounds. Alongside the political and administrative consolidation there was also the issue of unifying the nation, as although these areas had significant Romanian communities and there was a sense of common belonging that had grown over time through cultural transfers across these regions, the new circumstances necessitated a redefinition of national narrative both from Bucharest and within the incorporated territories themselves. Although Romanian historiography has traditionally emphasised the significances of the Unification over the difficulties it presented, in recent years scholarly focused has shifted towards also exploring the nuances of the unification, examining how these distinct regions were integrating and the ensuing effects on nation-state. The current study subscribes to this recent scholarly interest aiming to analyse the role of public monuments in cultivating a common sense of identity and examining the dissemination and impact of shared cultural symbols.

Keywords: Greater Romania, unification, national narrative, public monuments, cultural symbols

THE ABSOLUTE SUPERLATIVE IN CURRENT SPORTS JOURNALESE

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Background: The present research paper highlights the relationship between literary norm and linguistic usage. The aim of this paper is to identify and explain the way sports journalese is written and to discover the trends in the use of words formed with certain prefixoids in current sports journalese (www.sport.ro®). During the research, we have tried to ascertain whether the rules regarding the spelling of compounds with prefixoids are respected in current journalistic writing and have attempted to justify the existence of several ways of writing. We have selected "trendy" prefixoids that express the idea of absolute superlative and we have used both traditional and modern (including digital) methods and tools. The absolute superlative is frequently used in the Romanian mass media today because of the need to stay at the top of the ratings. Words formed with superlative prefixoids frequently occur in sensational news, but also in commercials or slogans. Many prefixoids are common in several languages: hyper-, mega-, retro-, super-, supra-, etc.

Keywords: superlative, prefixoids, mass-media, norm, usage

RECITALS AS A GENRE IN EU REGULATIONS

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Background: This paper aims at demonstrating that EU regulations recitals represent a well-defined genre with its own textual, syntactic and lexical features and communicative functions. As a methodology, genre and corpus analysis was adopted in order to investigate the characteristics of 1966 recitals from 90 EU regulations. In particular, as software, AntConc was used on a corpus made of 238981 tokens. Findings showed that there exist three types of recitals, that is prefatory, argumentative, and procedural, that recurrent rhetorical patterns can be recognised and that fixed steps and moves can be identified. In particular, the analysis cast light on the communicative functions carried out by recitals: on the one hand, a predictable informative function was identified; on the other, an unexpected promotional function was revealed. It is reasonable to conclude that recitals in EU regulations arepowerful instruments designed to tackle the problem of EU democratic deficit, which has never been really fixed.

Keywords: recitals, ESP, Legal English, genere analysis

SOME REFLECTIONS ON INTRALINGUAL TRANSLATION AND ITS STRATEGIES

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Background: The purpose of this paper is to further the debate about the nature and strategies of intralingual translation - historically relegated to the margins of translation studies, when included at all within the field - putting forward the adoption of specific categories that may allow for a more fluent description, analysis, and practice of this form of translation. After a review of the literature on the subject, the article approaches one of the main research questions of the paper, investigating the kind of terminology that could and should be adopted in the discussion of intralingual translation. The article then provides some practical exemplifications of how such strategies are and can be applied and for what purposes, analyzing in particular the case of Jane Austen's novel Pride and Prejudice, repeatedly translated intralingually, rewritten and adapted for different target readers and goals, as well as a few examples drawn from specialized discourse which, during the process of popularization, often undergoes intralingual translation processes. The analysis will show how some of the categories already adopted in the discussion of other forms of translation (i.e., interlingual, including audiovisual, and intersemiotic translation) could be profitably adopted in the case of intralingual translation as well, thus implicitly providing an affirmative answer to the second research question this article focuses on, namely whether intralingual translation should be definitely included in translation studies.

Keywords: intralingual translation, popularization, Pride and Prejudice

ON (POSSIBLE) TRAUMATIC LANGUAGE OF VIDEO AND COMPUTER GAMES: ADULTS' PERSPECTIVE

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Background: This paper explores the potential traumatic language embedded within video and computer games from the perspective of adults. Video and computer games, often celebrated for their immersive and entertaining qualities, may also carry elements of distress, anxiety, and trauma, impacting players in unexpected ways. This study delves into the nuanced experiences of adults who engage with video and computer games and analyses the possible traumatic elements within their narratives, gameplay, and interactions. By examining the emotional responses, triggers, and coping mechanisms of adult gamers, this research aims toshed light on the psychological dimensions of gaming and its effects on the adult demographic. Understanding how video andcomputer games can evoke or exacerbate trauma is crucial for both the gaming industry and mental health professionals. Thisinvestigation encourages a deeper understanding of the complex interplay between video and computer games and traumaticexperiences, providing insights into potential avenues for making gaming a more emotionally safe and therapeutic medium foradult players.

Keywords: linguistics, video and computer games, serious gaming, anxiety

STORYTELLING - A TOOL THAT MOVES

Corina Lirca[1]

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Background: The paper titled "Storytelling - A Tool that Moves" examines the utilization of storytelling across diverse professional and social fields: teaching, court pleading, copywriting, marketing, management, public relations, journalism, fundraising, even real estate and politics. Storytelling has the ability to engage people's emotions and motivate them into action. This concept was emphasized by Steve Jobs, when he recognized that "the storyteller [can set] the vision, the values, and the agenda of an entire generation." The significance of storytelling stems from its ability to address a multitude of needs, including the desires for connection, belonging, validation, healing, transformation, identity construction, and information.

Keywords: Storytelling, emotional needs, professions, identity construction

USING AUTOMATION IN SUBTITLING. GIVE ME A BREAK!

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Background: The paper explores the advantages and disadvantages of the controversial use of automation in audio-visual translation. Focus is laid on subtitling, which we see as highly relevant for the rapid pace of change in the digital landscape, seeking to satisfy the demand for video content accessibility. The collaborative cloud-based tool chosen for analysis is CaptionHub, used to generate multilingual subtitles while furthering concepts such as quality assurance, accuracy, consistency, efficiency, enhanced accessibility, smoother workflow and acceleration in turnaround time. Nevertheless, embracing automation in translation seems to have opened up a Pandora's box in what concerns the translator's status, their demand on the market, as well as the extent of their work and a series of financial implications.

Keywords: automation, subtitling, digital landscape

RURALISM IN CONTEMPORARY LITERATURE. HOW CLOSE THE COLD RAINS ARE, BY BOGDAN COȘA

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Background: It has been some time since ruralism has not represented a stake in our prose, and Bogdan Coșa's novel fills this gap. The novel proposes an unadorned world, described in an abrasive style, in a detached tone highlighted by the objective narrative perspective and by the author's option not to turn into a saving instance. The chain is, of course, a realistic one, and the naturalistic influence can be observed in the cause-effect relationship through which the characters' failure become explainable. The ruralism proposed by Coșa is entirely different from the one we were used to, so in his novel, we find an uncertain space that almost lacks the bucolic nature, a space of deeply flawed characters who later become victims of their own choices.

Keywords: Bogdan Coșa, ruralism, realism, contemporary literature, naturalism

MODELS OF INTEGRATED LEARNING (I)

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Background: Starting the Duch educational system and the concepts of integrated learning, interdisciplinary and transdisciplinary values and attitudes from Lucian Ciolan's books, we will explore the multiple possibilities of combining the contents of primary education programs. According to several types of curriculum (formal core type, differentiated, optional and informal-virtual or hidden and latent type) we will try toput together around one crosscurricular themes such as The Solar Sistem and/ or Nature abd the Environment at least 3 disiciplines. The Dutch model of integration of 4 disciplines and extracurricular activities around a crosscurricular theme in the official curriculum and/ or the crosscurricular theme addressed through extracurricular activities will be integrated in a complementary approach, offering and exploring traditional assessment options, but especially alternative assessment options through investigations and projects. For future primary education teachers, these models are particularly useful for initial and continuous formation, in order to prepare teachers to transmit values and attitudes that open the minds of students and develop their complex cognitive-affectiv and behavioral skills through transfer them in everyday life, through solving problems and involving in the life of communities.

Keywords: integrated learning, attitudes and values, Duch educational system, cognitive, moral and behavioral skills, combining curricular and extracurricular activitie

ABOUT THE GREEK-CATHOLICS: A FEW ORTHODOX VOICES (1945-1948)

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Background: The union of the Romanian Transylvanians with the Church of Rome at the end of the 17th century continues to be a sensible subject for historians, theologians, as for the public also. The debate has partially diminished after 1990, but there are still many details that have the potential to rekindle old disputes. Among these, one can mention the early history of the Greek-Catholic Church, or the beginnings of Christianity among Romanians. Precisely for this reason, the present study attempts to look objectively at one of these issues: the image of the Greek-Catholic Church in the Orthodox world, in the years 1945-1948, that is before the decree abolishing the Greek-Catholic Church in Romania. As expected, most insights came from the Transylvanians, Orthodox theologians, but also Orthodox historians, who expressed the desire to restore the religious unity of the Romanian Transylvanians within the framework of Orthodoxy.

Keywords: Communist Regine, Orthodox Historiography, Greek-Catholic Church, Orthodox Press, historical truth

BETWEEN HISTORY AND LITERATURE: GEORGE ORWELL AND GEORGES BERNANOS ON THE SPANISH CIVIL WAR

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Background: With the exception of the two world wars, few historical events have attracted public attention more than the Spanish Civil War. Intellectuals of different origins and different political orientations confronted an apparently marginal event in European and world history. Born as a "golpe", the Spanish Civil War soon became an international event, taking on a character that went beyond its direct meaning. Perceived as a struggle between ascendant Fascism and anti-Fascism, from the first months the Spanish conflict took on an ideological character that previous wars had never had. Precisely this ideological character, of an epochal struggle between Good and Evil, pushed thousands of volunteers to enlist on one side or the other of the opposing sides. Among these, many intellectuals chose to support one of the warring parties, with weapons but also with their works. Among others, George Orwell and Georges Bernanos, whose writings on the Spanish War soon became oft-cited sources by historians who studied the event from multiple points of view. Starting from different positions, the two authors arrived at a radical critique of the way in which the war was conducted by the side they initially supported, and finally of the War as a human event.

Keywords: Spanish Civil War, History and Literature, George Orwell, Georges Bernanos, Fascism

REWRITING AUTOBIOGRAPHY: ALTERNATIVE EXPRESSIVE DEVICES IN ADICHIE'S AMERICANAH

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Background: This paper explores the poetics and politics of contemporary immigrant life writing by showing how Chimamanda Ngozi Adichie challenges authoritative notions of unitary identity, essentialism, integrity, truth, and the canonical institutions of bildungsroman and autobiography in her novel Americanah (2013). Ifemelu's blog posts create a personal, intimate, and powerful narrative space inside the novel while also crossing its boundaries to occupy a "different" space. We thus argue that blogging represents an alternative space of expression and agency in and outside the text, addressing the issue of "blackness" in the America of the early and mid-2000s while contesting multiple hegemonic structures.

Keywords: autobiography, life writing, blogging, space, immigrant literature

SCIENCE AND TECHNOLOGY

INTEGRATING A VISION SYSTEM ON AN INDUSTRIAL ROBOT ASSEMBLY STATION

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Background: The technological development considering the Industry 4.0 concepts consists of organizing factories more intelligently, autonomously, and efficiently based on the automation and interconnection of cyber-physical systems. Vision systems are indispensable to robotic manufacturing lines regarding local control of robots and production monitoring. In this context, the study aims to develop and integrate an artificial vision solution in an assembly line on a smaller scale. To implement the solution, an assembly line with a conveyor belt controlled by a Siemens programmable controller with a Siemens HMI panel and an ABB IRB120 industrial robotic arm cell and ABB IRC5 controller capable of assembling demonstration products in various configurations from 3D printed plastic material parts was used, for which the lack of vision systems represents a major deficiency. The Cognex-based vision system takes images from the assembly station, processes them, and provides useful data both for the local management of the robotic arm, by directing it in "pick and place" operations, but also for the control of the production process through qualitative and quantitative evaluation of parts and optimization of production time. Different communication technologies and standards like Ethernet IP, Profinet, Modbus, and OPC UA were studied for solution integration. Aspects related to digital modeling and interfacing of the station were also addressed. The implementation of the vision system for the detection and location of industrial subassemblies increases the production time and at the same time allows their geometrical location on the supply table, without using predefined positions. Although the main study involves integrating the vision system, the contributions obtained are useful in theoretical and applied research, using Industry 4.0 concepts and current industrial technologies. This work was supported by the University of Medicine, Pharmacy, Science and Technology "George Emil Palade" of Târgu Mureş Research Grant number 164/3/10.01.2023.

Keywords: vision system, ABB IRB120, industrial robot, assembly line, vision-based robotic handling

DESIGN FOR ADDITIVE MANUFACTURING OF 3D PRINTED POROUS SCAFFOLDS FOR VASCULAR APPLICATIONS

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Background: Background: 3D printing technologies allows the scaffolds to be designed and optimized for bio mimetic properties and multi functionality, such as porosity, elasticity, mechanical performance, and others, targeting the similarity to the natural tissues. Material and methods: Scaffolds were designed using Autodesk Inventor CAD software. Fused Deposition Modeling (FDM) printed samples were made on Ultimaker S3 printing machine, with BASF PLA and TPU filaments of 2.85 mm diameter, and Cura used as slicer software. Stereolitography (SLA) printed samples were prepared on Form3 printing machine, using Formlabs Elastic 50A resin, Preform software as slicer, and FormWash and FormCure equipment for samples post processing. Optika B 383 MET microscope, equipped with DSLR Nikon D3500, 24.2MP camera and DigiCamControl software, was usedfor pore dimensions evaluation, and Adam AEA 100 analytical balance was used for weight measurements.Results: Porous 3Dprinted scaffolds, having dimensions of 40 x 40 x 1 mm, were designed for biocompatibility and elasticity. FDM scaffolds werefabricated in single material (only PLA or only TPU layers) and dual material (PLA layers alternating with TPU layers) structures. The pores dimensions were in 50-200 micrometer range. SLA scaffolds were fabricated in single material structure, with pores in20-50 micrometer range.Conclusions: Present work shows successful development of porous 3D printed scaffolds for vascularapplications. By varying the interline spaces in each layer of the structures, the porosity can be controlled when 3D printing is doneby FDM technology. Using SLA technology, the porosity can be controlled by a proper design of pores diameter, correlated withprocess parameters.

Keywords: 3D printing, porous scaffolds, FDM, SLA

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MEDICINE AND PHARMACY

ANESTHESIOLOGY AND INTENSIVE CARE MEDICINE

AN ANIMAL MODEL OF CELLULAR MATRIX PROCESSING FOR THE PHARMACOKINETIC STUDY OF ROPIVACAINE BY HPLC LC MS/MS TECHNIQUE

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Background: Regional anesthesia uses anesthetic medication to abolish pain perception in some regions of the body, allowing the patient to maintain consciousness throughout the surgical intervention. Ropivacaine is the most widely used local anesthetics, but at the same time several cases of ropivacaine toxicity are described in the literature. The mechanisms behind local anesthetic toxicity are still not well understood, thus a study of the pharmacokinetic distribution model of ropivacaine in biological fluids and tissues is of high interest. **Material and methods:** For the study of the pharmacokinetics of ropivacaine, an animal model using rats was chosen, given the profile similarity to humans. The animals were divided into homogenous groups about age and gender. Each animal was weighed to use a weight-adapted anesthetic dose. A total of 72 animals were used for the study. Animals were first put under general anesthesia, the local anesthetic was then administered subcutaneously and the animals were exsanguinated through cardiac puncture at the appropriate timing. Tissues and blood samples were collected. Plasma samples were processed by protein precipitation, while tissue samples were processed by solid-liquid extraction for further LC-MS/MS analysis. **Results:** Rats as laboratory animals have been used in many studies, and extrapolating results obtained to human subjects has been well described, adapting a human model easier. Due to the high risk of overdose and life-threatening events occurring when using ropivacaine, studying its pharmacokinetic and pharmacodynamic impact on humans is difficult. **Conclusions:** In a clinical setting collecting samples during toxicity events is difficult due to the lack of prior consent and the necessity of quick and life-saving interventions that can interfere with LC-MS analysis. Thus, to avoid these difficulties the animal model was developed and successfully applied, which can give essential guidance in future clinical practices. "This work was supported by the University of Medicine, Pharmacy, Science andTechnology "George Emil Palade" of Târgu Mureş Research Grant number 163/5/10.01.2023"

Keywords: Ropivacaine, local anaesthesia, HPLC LC-MS/MS, rats, regional anaesthesia

OLANZAPINE OVERDOSE ASSOCIATED WITH RHABDOMYOLYSIS - A CASE REPORT

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Background: Olanzapine is a widely adopted atypical antipsychotic medication. It is used to treat positive symptoms of schizophrenia and depressive symptoms. Reports show that the incidence rate of adverse reactions to olanzapine is significantly lower than those of other classic antipsychotic medications. However, olanzapine overdose may be associated with severe consequences (agitation or loss of consciousness, extrapyramidal symptoms or coma). **Material and methods:** We present the case of a 30-year-old woman, diagnosed with major depressive disorder, who had taken 300 mg (30 tablets) of olanzapine for autolytic purposes. After admission to the ICU, the patient presented swelling of the left lower limb, elevated liver enzymes and a very high level of creatine kinase. Due to poor response to other treatments, Continuous Renal Replacement Therapy was initiated. **Results:** During hospitalization, the patient benefits from two sessions of CRRT-CVVHDF, following which the correction of the syndrome of rhabdomyolysis and hepatic cytolysis was noted. CRRT was associated with volemic substitution, diuretics, antibiotherapy, and hepato- and gastroprotective therapy. After 6 days, she was discharged from the ICU. **Conclusions:** Sedative and anticholinergic effects are the main side effects of olanzapine. Sedation-induced coma causes long-term compression of muscle tissues, which results in a high risk of muscle tissue injury and rhabdomyolysis.

Keywords: olanzapine overdose, rhabdomyolysis, compartment syndrome, creatine-kinase, continuous renal replacement therapy

ADRENAL INSUFFICIENCY MIMICS SEPSIS-A CASE REPORT

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Background: Paraneoplastic syndromes are frequently observed in lung cancer, especially in small-cell lung cancer (SCLC). Paraneoplastic syndromes sometimes take on different atypical forms that can mimic other pathologies. Lung malignancies, particularly SCLC, are known to be associated with the secretion of adrenocorticotropic hormone (ACTH), which can lead to the development of acute adrenal insufficiency following surgical treatments. **Material and methods:** We present the case of a patient who was recently diagnosed with infiltrative nasal adenocarcinoma that was surgically excised. Shortly after, he was diagnosed with SCLC, for which a right posterior thoracotomy and a right lower lobectomy were performed. **Results:** On the third day following the surgical procedure, the patient showed signs of septic shock, including hemodynamic instability, leukocytosis, and positive inflammatory markers. The following protocols included obtaining bacteriological samples, escalating antibiotic treatment, administering vasoactive agents, and providing positive inotropic support. However, no discernible change was observed in the patient's clinical or laboratory parameters. On the fourth day, the patient's treatment regimen included the administration of methylprednisolone at a daily dosage of 250 mg. Subsequently, a notable improvement in blood pressure was noticed, facilitating the prompt reduction of vasoactive drug dosages. The possibility of adrenocortical insufficiency was considered after the excision of the pulmonary tumor which was later confirmed by the low levels of urinary free cortisol, low serum ACTH, even after the administration of methylprednisolone. **Conclusions:** In ICU, it is usual to attribute infections as the primary cause of cardiovascular collapse, potentially leading to an overdiagnosis of sepsis or septic shock. The peculiarity of the case is that although acute adrenal insufficiency is a rare cause of circulatory collapse in intensive care, it should be considered in patients with known risk factors as a differential diagnosis.

Keywords: adrenal insufficiency, sepsis, ACTH

THE ASSESSMENT OF DIAPHRAGM AND PSOAS MUSCLES BY CT SCANS IN CRITICALLY ILL PATIENTS ADMITTED FOR THORACIC TRAUMA

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Background: Currently, there is a lack of a comprehensive database in Romania that specifically focuses on patients with chest trauma, resulting in challenges in collecting precise and reliable details relating to thoracic trauma. The objectives of the current study were to examine the outcome of critically ill patients admitted for thoracic trauma, and to assess the role of CT in the evaluation of the diaphragm and psoas muscles. **Material and methods:** This is a retrospective observational study. Patients included had a CT examination during their admission. Adequacy screening for diaphragm and psoas assessment was conducted on all CT images. The measurement of diaphragmatic thickness was performed at the level of the celiac truncus, with a plane that intersects the anterior border of the vertebral body. The measurements for psoas included total psoas area at the level of the third lombar vertebrae and psoas density. **Results:** All 52 patients were classified according to the severity of their injuries using the AIS, ISS, and RTS scales, as well as the mortality rate. The results demonstrated no statistically significant difference in these parameters regarding hemodynamic and respiratory status for minor and severe trauma groups. The thickness of the diaphragm was assessed upon the patients' arrival, obtaining values of 7.38±1.98mm for the right diaphragm and 5.78±1.59mm for the left diaphragm, with no statistically significant differences identified between survivors and deceased. Similar results were identified for total psoas area and psoas density. **Conclusions:** The thoracic CT scan has a purpose that extends beyond the first detection of life-threatening injuries, as it also provides valuable assistance in evaluating the thickness of the diaphragm, total psoas area and psoas denisty. Although no significant differences were found regarding the prognosis between the survivors and the deceased, results might potentially serve as a predictor for the severity of the injury.

Keywords: thoracic trauma, diaphragm, psoas muscle, critically ill, outcome

AQUIRED ANGIOEDEMA - A TREATMENT CHALLENGE

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Background: Aquired angioedema is a rare acute inflamatory disease which comes up by way of a bradikinin induced mechanism, associated with C1 INH consumpting diseaes. It can be distinguished from other types of angioedema by some clinical issues: no prurit, slow developing (1-5 days), nonresponsive to antihistaminic drugs, corticosteroids or adrenaline, it ails the subcutaneous, gastrointestinal and respiratiry tissue. The hereditary angioedema (genetic C1 INH deficiency) has similar clinical traits except it affects younger pacients.The treatment should be focused on C1 INH concentrate, bradikinin receptor antagonist (Icatibant), kalikrein inhibitor (escalantide), fresh frosen plasma, stopping the angiotensin-converting enzyme (ACE) intake in specific cases and if mandatory, tracheostomy. **Material and methods:** We report a case diagnosed with aquired angioedema in the Sibiu Clinical Military Hospital, with multiple relapses of the disease.The 79 years old, M pacient with neither ACE inhibitors intake nor limfoproliferative or autoimmune disorders history was brought 8 times during the last 3 years in the Emergency Care Unit of the hospital with similar angioedema symptoms. He twice underwent tracheostomy due to unfavourable response to initial medication for supposed angioneurotic edema. During the last admission in the OMF Surgery Department, the pacient was investigated for aquired angioedema (C1INH, C4) which confirmed the diagnosis. He was further investigated in the Targu Mures Center for Hereditary Angioedema and received treatment recommendations. **Results:** During the last admission in Sibiu Emergency Clinical County Hospital, the pacient was transfused with fresh frosen plasma, no tracheostomy was performed and progressive recovery was encountered. The follow-up was uneventful by now. **Conclusions:** Pacients with aquired angioedema may be misdiagnosed and, as a consequence, unappropiate treated. Knowledge of specific manifestations of the disease may free the pacient of unnecessary tracheostomy.

Keywords: aquired angioedema, tracheostomy, bradikinin, C1INH, fresh frosen plasma

DNA PROPERTIES IN ARDS PATIENTS – A PILOT STUDY

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Background: ARDS is a heterogenic inflammatory process in the lungs which affects many of the critically ill patients. The objective of the study is to determine new therapeutic targets and diagnostic methods for the early recognition of high-risk-patients with ARDS, to improve their outcome. Genetic testing offers the possibility for a personalized approach of therapeutic conduits. At this stage of the study, DNA is prepared, to later determine SNPs which may contribute to the development of ARDS. **Material and methods:** Whole blood samples were collected from 127 patients admitted to ICU. Patients were enrolled in 2 groups: patients diagnosed with acute respiratory distress syndrome and control group, according to Berlin criteria. Also, ARDS patients were separated in 2 subgroups: patients diagnosed with ARDS and sepsis simultaneously and patients with ARDS without sepsis. After DNA extraction from whole blood samples using PureLink Genomic DNA Mini Kit, DNA concentration and purity was assessed spectophotometrically in both groups. **Results:** DNA concentration and purity was assessed and statystical analysis was made to determine differences between the groups. We did not find a statistically significant difference in DNA purity between patients diagnosed with ARDS and control group ($p=0.09$). Regarding the DNA yield, there was no statistically significant data found comparing ARDS and control group ($p=0.35$). Strong positive correlation was found between DNA yield and leucocyte count ($r=0.35$ with CI95% 0.12 to 0.56, $p=0.002$). Also, there was a statistically significant difference between DNA yield in patients having simultaneously ARDS and sepsis and patients diagnosed with ARDS, but without sepsis ($p=0.02$). Regarding difference in DNA purity between patients having simultaneously ARDS and sepsis and patients with ARDS without sepsis, no significant data was found ($p=0.8$). **Conclusions:** In this study we found that leucocyte count and other sepsis criterias have an impact on the DNA concentration and purity.

Keywords: ARDS, DNA, extraction

SEPSIS-INDUCED IMMUNOSUPPRESSION - ARE THERE ANY CHECKPOINTS TO PASS?

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Background: The global burden of sepsis and septic shock reaches high incidences worldwide, despite the vast knowledge on this topic. Recent studies approach a more in-depth perspective regarding the outcome of this pathology by studying the immunological and pathobiological changes. This study aims to evaluate the variation of programmed death protein (PD-1) and programmed death ligand 1 (PD-L1) in septic and septic shock patients, as well as examining the site of infection, cause and the pathogens involved. **Material and methods:** This is a prospective, observational, and ongoing study conducted on 62 patients admitted with sepsis or septic shock according to the SEPSIS 3 Consensus definition. Clinical and paraclinical data were collected on day 1 (D1) and day 5 (D5) after meeting the inclusion criteria. **Results:** For septic patients, PD-1 ranges between 0.08 - 0.818 ng/ml on D1, and increases to D5 in the interval of 0.01 - 0.1 ng/ml. PD-L1 on D1 varies between 0.390 - 18.647 ng/ml, and increases in the interval 5.1 - 6.0 ng/ml. Regarding septic shock, PD-1 ranges between 0.44 - 0.964 ng/ml and increase to D5 in the interval 0.1 to 0.4 ng/ml. PD-L1 present values ranging between 0.989 and 12.753 ng/ml on D1; intervals 1.1 - 2.0 ng/ml and 3.1 - 4.0 and 7.1 - 8.0 ng/ml present increases to D5. Te predominant aetiology was bronchopneumonia and peritonitis, highest pathogen incidence was represented by Acinetobacter baumanii, followed by Klebsiella pneumoniae with its variants. **Conclusions:** The PD-1/PD-L1 axis plays a pivotal role in the depletion of T lymphocytes and monocytes, and various non-hematopoietic cells, such as hepatocytes, vascular endothelial cells, and others. Early detection and blocking of increasing PD-1 or PD-L1 expression restores T-cell function and decreases apoptosis. This work was supported by the University of Medicine, Pharmacy, Sciences and Technology "George Emil Palade" of Târgu Mureş Research Grant number 10126/17.12.2020.

Keywords: Sepsis, Septic shock, PD-1, PD-L1, Acinetobacter baumanii

CARDIOLOGY

ASSESSING THE IMPACT OF LONG-TERM STATIN TREATMENT ON PERIVASCULAR INFLAMMATION AND PLAQUE DISTRIBUTION - A COMPREHENSIVE CORONARY CT FOLLOW-UP STUDY

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Background: Coronary Computed Tomography (CCT) has validated the use of perivascular fat attenuation index (PVAT-FAI) as a credible indicator of coronary inflammation. Various investigations have delved into the potential benefits of statins in mitigating the hazard of plaque rupture and ensuing cardiovascular episodes. The impact of statin therapy on PVAT-FAI, however, remains yet to be distinctly illustrated. Our research aimed to explore the impact of prolonged high-dose statin treatment on PVAT-FAI at the site of coronary lesions, as well as to evaluate changes in plaque distribution. **Material and methods:** Our study included 52 patients who presented with typical chest pain, were assessed to have a low to intermediate likelihood of coronary artery disease, and underwent CCT scans revealing at least one coronary atheromatous plaque. In accordance with current ESC guidelines, all participants were administered statin therapy, with follow-up CCT's conducted over a period ranging from 1 to 3 years. To quantify lesion-specific PVAT-FAI and evaluate plaque attributes during initial and follow-up consultations, we utilized cutting-edge AI-powered instruments, namely CaRi-Heart® and syngo.via Frontier®. **Results:** At the outset, adipose tissue CT density (ranging from -190 to 15 HU) showed no significant differences. Statin therapy led to a notable reduction in serum lipids, affecting both total and LDL cholesterol. PVAT-FAI scores across all three coronary arteries consistently dropped at 52-week and 156-week follow-up intervals. Likewise, PVAT-FAI score centile values significantly dropped during the second and final scans for all three arteries. The follow-up period also revealed a decrease in non-calcified plaque and a significant increase in calcified volume. **Conclusions:** CaRi-Heart® mapping demonstrated a significant reduction in coronary inflammation, as indicated by the PVAT-FAI score, following high-dose statin therapy. The PVAT-FAI score and centile hold potential as effective imaging biomarkers to track the anti-inflammatory effects of statin treatments. Additionally, changes in plaque distribution were well monitored using syngo.via Frontier®.

Keywords: perivascular adipose tissue inflammation, coronary computed tomography, fat attenuation index score, coronary artery disease, statin treatment

FACTORS ASSOCIATED WITH MYOCARDIAL EDEMA AT CARDIAC MAGNETIC RESONANCE IN POST COVID PATIENTS

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Background: The occurrence of myocarditis after SARS-CoV-2 infection is highly raised during post-COVID period. Cardiovascular magnetic resonance (CMR) has become the primary tool for non-invasive assessment of myocardial inflammationin patients with suspected myocarditis, due to its unique potential for non-invasive identification of the various hallmarks of the inflammatory response, with relevant impact on patient management and prognosis. We investigated the association between the presence of myocardial edema (ME) and cardiovascular risk factors in patients undergoing CMR analysis for post-COVID myocarditis. **Material and methods:** Fifty-seven patients who underwent CMR for myocarditis were assigned into two groups based on the presence of ME: group 1 - patients with ME (n=38) and group 2 - patients without ME (n=19). Data recorded included demography and cardiovascular risk factors: smoking status, obesity, diabetes mellitus, hyperlipidemia, essential hypertension and heart failure. **Results:** Compared to ME-naive patients, those with ME were older (42.92±15.08 *vs.* 36.79±17.1;p = 0.14) and more often males. There were no statistically significant differences between the study groups regarding presence of most CV risk factors (52.6% *vs.* 57.9% for hypertension, hypercholesterolemia (44.7% *vs.* 31.6% for hypercholesterolemia and 65.8% *vs.* 57.9% for obesity, all p>0.05). However, patients with ME presented more frequently heart failure (71.1% *vs.* 21.1%; p = 0.004), type 2 diabetes (76.3% *vs.* 47.4%; p=0.02) and smoking habits (91.9% *vs.* 38.9%; p<0.001). **Conclusions:** Our data suggest that in post-COVID patients, the presence of ME on CMR is associated with several features of higher CV risk, such as heart failure, diabetes mellitus and smoking status, suggesting that these factors could influence the evolution of viral myocarditis in COVID patients.

Keywords: myocardial edema, viral myocarditis, CV risk, post COVID

EPICARDIAL ADIPOSE TISSUE AND EVALUATION OF INFLAMMATION IN CORONARY ARTERIES USING A NOVEL COMPUTED TOMOGRAPHY MARKER

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Background: Pericoronary fat attenuation index (FAI) on coronary computed tomography angiography imaging is a novel marker of coronary vascular inflammation with prognostic value for major cardiovascular events and used in combination with epicardial adipose tissue (EAT) can offer a more complex cardiovascular risk stratification. There is sparse data regarding the volume of EAT and FAI. **Material and methods:** The study included 140 patients (age 61.5±10 years, 65% males), who underwent clinically indicated CCTA for chest pain using a single-source 128-slices scanner. For each patient was calculated the EAT volume automatically based on its specific density and the calcium score. FAI score for each coronary artery, Cari-Heart Risk score and modified Duke score was assessed using an AI-powered solution called CaRi-Heart®. Based on acquisitions, it was set a median of EAT volume at 168.3 ml and patients were divided in higher EAT volume and lower EAT volume, respectively. **Results:** In our cohort of patients, those with higher EAT volume, compared to patients with a lower EAT volume, had a higher level of inflammation quantified by FAI score in each coronary artery, that is, LAD (14.5±10.7 vs 9.1±5.8, p=0.0005), LCX (14.1±8.1 vs 9.1±5.3, p<0.0001) and RCA (20.8±16.4 vs 13.5±11.7, p=0.004), had a higher calcium score (189.4±145 vs 140.8±140, p=0.002). Cari-Heart Risck score was higher in patients with higher EAT volume (27.7±23 vs 18.6±18, p=0.01). CT-modified Duke score was not significantly different between groups (3.1±1.3 vs 2.8±1.4, p=0.2). **Conclusions:** In this study we showed that patientswith a higher EAT volume had a higher level of inflammation and had a higher cardiovascular risk. Including both the EATvolume and FAI score in CT evaluation of patients can provide more detailed insights for risk stratification and make the progessesto a more individualised medicine

Keywords: Epicardial adipose tissue, Fat attenuation index, CCTA

THE ADVANTAGES OF OCT AND FFR EVALUATION VERSUS FFR IN THE ASSESSMENT OF ATHEROSCLEROTIC PLAQUES.

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Background: This paper examines the advantages of optical coherence tomography (OCT) and residual fractional flow reserve (FFR) evaluation compared to the traditional FFR method in assessing atherosclerotic plaques in coronary arteries. OCT provides superior spatial resolution, enabling detailed visualization of vascular structures and plaques, thus facilitating more accurate identification and characterization. Concurrently, FFR measures the degree of blood flow obstruction, providing functional information on coronary lesions. By combining these two techniques, comprehensive data can be obtained, enhancing the understanding of the complexity of atherosclerotic lesions and guiding therapeutic decisions. Compared to the traditional FFR method, OCT evaluation offers direct visualization of lesions on the arterial wall, allowing for more precise identification of atherosclerotic plaque types and compositions. . Integrating these two techniques into clinical practice can improve diagnostic accuracy and treatment guidance, contributing to a more personalized management of patients with coronary artery diseases.This paper reviews recent studies and clinical outcomes supporting the advantages of OCT and FFR evaluation over FFR aloneregarding the diagnosis and management of atherosclerotic plaques. **Material and methods:** The subjects will be divided into twogroups, the experimental group, and the comparative group. In the experimental arm, atherosclerotic plaques will be assessed usingboth FFR and OCT methods, compared to the comparative arm where only the FFR method will be employed. **Results:**Atherosclerotic plaques seemingly insignificant from a functional standpoint exhibited characteristics of vulnerability in OCTevaluation, thus requiring stenting. No increase in MACE (Major Adverse Cardiovascular Events) was observed in the experimentalgroup compared to the comparative group. **Conclusions:** The integration of these two techniques provides a more comprehensiveand precise approach to evaluating coronary lesions, leading to improved therapeutic decisions and clinical outcomes for patientswith cardiovascular diseases.

Keywords: FFR, OCT, atherosclerotic, plaques

THE ROLE OF THE FAI INDEX AND THE CORONARY CALCIUM SCORE IN DETERMINING THE INCREASED RISK IN THE CORONARY SHAFT

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Background: Assessing the CAC score through CTA is a valuable tool in predicting future cardiovascular events. Coronary inflammation, measured by FAI technology in epicardial fat using CTA, has been shown to be correlated with an increased risk associated with coronary heart disease. The aim of the study was to emphasize the correlation between the CAC score and the FAI index of coronary inflammation in the determination of cardiovascular risk in patients. **Material and methods:** In our study, we enrolled 200 patients who had undergone CCTA scans and categorized them into two groups based on their CAC scores. Group 1 included 75 patients with CAC < 100, and Group 2 consisted of 125 patients with CAC > 100. The FAI score was determined for the LAD, LCX, and RCA in all patients included in the study. Cardiovascular risk resulting from the CT scans was assessed using the CariHeart score, which is derived from the CT phenotype of coronary plaques. **Results:** Patients with a high CAC score exhibited a higher FAI score (with a mean FAI score of 16.70 ± 9.61 in Group 2 compared to 9.67 ± 8.32 in Group 1, p = 0.8). The inflammatory coronary risk was notably greater in the high CAC score group (25.11 ± 16.55 vs. 14.75 ± 12.47, p = 0.0002). Furthermore, when we analyzed FAI scores along the coronary arteries, we found that in patients with a high CAC score, there was significantly more inflammation in the RCA compared to the LCA (mean FAI score of 20.15 ± 13.74 for RCA vs. 13.57 ± 8.87 for LCA, p = 0.003). In patients with lower CAC scores, this difference was not statistically significant . **Conclusions:** An individual analysis of risk within each coronary artery indicated an increased risk in the right coronary artery when compared to the left coronary arteries.

Keywords: Computed Tomography Angiography, Coronary Artery Calcium, Fat Attenuation Index, coronary inflammation

IMPLICATIONS OF CIRCULATING MACROPHAGE MIGRATION INHIBITORY FACTOR 1 IN HEART FAILURE WITH REDUCED AND MILDLY REDUCED EJECTION FRACTION

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Background: Macrophage migration inhibitory factor (MIF), a chemotactic cytokine, is an essential mediator of the innate immune response. Although intracellular MIF demonstrates cardioprotective effects during the initial stages of myocardial ischemia/reperfusion injury, high concentrations of circulating MIF are linked to increased mortality in critically ill patients. **Material and methods:** We determined circulating levels of MIF-1 and interleukin 6 (IL-6) in seventy patients with heart failure with reduced and mildly reduced ejection fraction (HFrEF, HFmrEF), using an ELISA technique. All participants underwent comprehensive transthoracic echocardiography and blood sampling. **Results:** Statistically significant correlations were reported between MIF-1 (519.99, IQR 317.26-1219.38 pg/mL), 25-hidroxyvitamin D (r = -0.27, p = 0.022), uric acid (r = -0.26, p = 0.031), and estimated glomerular filtration rate (r = -0.30, p = 0.011). IL-6 (4.49, IQR 1.77-8.95 pg/mL) showed an inverse relationship with serum albumin (r = -0.40, p = 0.0007), ferritin (r = -0.24, p = 0.047), and iron (r = -0.34, p = 0.004), respectively. Although no significant difference was found between HFrEF and HFmrEF regarding MIF-1 (661.64, IQR 335.67-1575.26 pg/mL vs. 393.06, IQR 301.11-740.09 pg/mL; p = 0.115) and IL-6 (4.69, IQR 2.46-9.25 pg/mL vs. 2.75, IQR 1.43-6.26 pg/mL; p = 0.165), patients with lower left ventricular (LV) EF showed higher cytokine levels (MIF-1, r = -0.33, p = 0.005; IL-6, r = -0.22, p = 0.062). A consistent statistical trend applied for LV global longitudinal strain as well (MIF-1, r = 0.41, p = 0.0004; IL-6, r = 0.24, p = 0.042). A positive correlation was identified between MIF-1 and IL-6 (r = 0.24, p = 0.049), but only IL-6 reported a significant association with CRP (r = 0.26, p = 0.033). **Conclusions:** Both MIF-1 and IL-6 highlight the important role played by low grade systemic inflammation in HFrEF and HFmrEF, especially regarding its impact on LV systolic function.

Keywords: MIF-1, IL-6, inflammation, heart failure with reduced ejection fraction, heart failure with mildly reduced ejection fractio

DENTAL MEDICINE

3D PRINTED SURGICAL GUIDES USED FOR RAPID PALATAL EXPANSION PROCEDURE

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Background: To facilitate orthodontic tooth movement, surgical interventions on the alveolar bone have been made for a long period of time, using burs and piezo tips. To avoid complications, many authors use a minimally invasive, flapless procedure that consists in making microincisions with the aid of a piezotome, based on a 3D printed surgical guide, which is called computer-guided piezocision. The aim of this study was to assess the advantages of this type surgical intervention which is less invasive, more predictable, and more precise with the aid of resin surgical guides. **Material and methods:** For evaluation, using pre-treatment cone beam computed tomography examination to precisely plan the position of the piezocision and VAT polymerization (also known as stereolithography device [SLA]) to create a pre-treatment surgical guide of the future piezocision in ten (n=10) research participants were manufatured. Piezoelectric osseous cuts were performed using an ultrasonic frequency at 30 kHz to ensure the designated depths and lengths following the designated guiding slots of the surgical guide. **Results:** The post treatment cone beam computer tomography scans (sagittal and axial views) showed improved position of teeth within the bone, opening of the median suture and the amplitude of the maxillary expansion by enlarging the intermolar and inter-premolar distance as a result of the activation of the Rapid Palatal Expander in all cases. **Conclusions:** Computer-assisted piezocision guides for surgically facilitated rapid palatal expansion can safely produce maxillary expansion with minimum side effects. Acknowledgement: The George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures Research Grant number 163/1/10.01.2023 supported this work.

Keywords: CBCT, maxillary-expansion, orthodontic

THE GINGIVAL CREVICULAR FLUID BONE TURNOVER MARKERS – A LITERATURE REVIEW

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Background: Orthodontic tooth movement relies on coordinated tissue resorption and formation in the surrounding bone and periodontal ligament. The remodeling activity is the repercussion of several biochemical, cellular, and molecular mechanisms. The gingival crevicular fluid of moving teeth reflects these events, with markedly elevated concentrations of its constituent components. The aim of this paper was to provide an overview of the main bone turnover markers found in the gingival crevicular fluid. **Material and methods:** This research was conducted by electronic searches in PubMed, Cochrane, and Scopus databases using the following keywords: gingival crevicular fluid, bone turnover markers, and orthodontic tooth movement. Cross-sectional and experimental studies published between the 1st of October 2018 and the 1st of October 2023 were included. **Results:** The most prevalent biomarkers for bone formation described by literature are osteocalcin, bone alkaline phosphatase, and alkaline phosphatase while those for bone resorption are N-terminal telopeptide, tartrate-resistant acid phosphatase, and osteopontin. **Conclusions:** Various gingival crevicular fluid indicators are available to recognize the biomechanical alterations brought by orthodontic tooth movement. These indicators could also prove the effectiveness of laser therapy used during orthodontic treatment of adult patients. **Acknowledgment:** This work was supported by the George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures Research Grant number 511/4/17.01.2022.

Keywords: gingival crevicular fluid, bone turnover markers, orthodontic tooth movement

MICROBIOLOGICAL ANALYSIS OF HEAT-CURED DENTURE BASE ACRYL RESIN: IN VITRO STUDY

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Background: Complete denture wearer patients often face denture stomatitis caused by Candida albicans colonization of resin denture bases. The *in vitro* study aimed to assess the antifungal effect of different solutions on heat-cured denture base acrylic resin. **Material and methods:** The samples were made from thermopolymerizable acrylate and immersed for 48h and incubated at 36.5°C in mouthwash solutions (GUM mouthwash with pomegranate and ginger extract and commercial Parodontax) and in natural solutions prepared in the lab with a potential antifungal effect such as cloves, turmeric, chitosan, propolis. In the microbiological laboratory, several inoculations were performed on culture media using Candida albicans and parapsilosis as reference strains on agar medium and were placed in the incubator for another 48h. An electronic microscope connected to a computer was used to count the colonies grown on each medium. **Results:** The substances that recorded the least colony growth were Parodontax mouthwash and mouthwash with pomegranate and ginger extract, both commercially available, while at the opposite pole was the clove solution prepared in the laboratory, with a high number of colonies grown compared to the standard. Propolis recorded a medium number of colonies. **Conclusions:** In experimental conditions, the Candida albicans colonization of heat-cured denture base acrylic resin was reduced by immersion in mouthwash solutions. Some natural substances used under certain conditions seem to be less effective against Candida Albicans.

Keywords: Candida albicans;, denture stomatitis;, thermopolymerizable acrylate;, natural solutions ;, mouthwash;

TOWARDS GREEN DENTISTRY: A REVIEW OF SUSTAINABILITY IN ORAL HEALTH PROVISION

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Background: This review explores the multifaceted relationship between oral health provision and sustainability, addressing eight closely interlinked themes. Despite healthcare's central purpose is to support health and life, unsustainable practices contribute to climate change, urging a paradigm shift in oral healthcare towards environmental consciousness. This review aims to understand the current knowledge base, identify barriers and opportunities for sustainability implementation, and highlight best practices. **Material and methods:** A comprehensive literature review was conducted to analyze articles, guidelines, and documents related to sustainability in oral health provision. The review encompasses topics such as environmental impacts, waste management, procurement practices, and the role of research and education. Emphasis was placed on identifying gaps in current practices and potential strategies for implementing sustainable approaches in oral healthcare. **Results:** The review reveals the paradoxical nature of healthcare contributing to environmental degradation. Themes such as biomedical waste management, plastics use, and procurement practices are identified as critical areas requiring sustainable interventions. The literature highlights the need for increased awareness, interdisciplinary collaboration, and the incorporation of sustainability principles into dental education. **Conclusions:** Oral health provision's sustainability is a complex interplay of environmental impacts, waste management, and procurement practices. The scoping review underscores the urgency for a global shift towards green dentistry, as endorsed by organizations like the World Dental Federation. The integration of sustainability principles into dental education is crucial for future practitioners, and digital dentistry emerges as a promising avenue for reducing environmental impact. The review concludes by advocating for a continuous interdisciplinary research process to address knowledge gaps and implement sustainable practices, ultimately contributing to a greener and eco-friendly future in oral healthcare.

Keywords: green dentistry, sustainability, dental practice, oral healthcare

STATISTICAL STUDY REGARDING EXTRACTION AND NON-EXTRACTION METHODS IN ORTHODONTIC TREATMENTS

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Background: The techniques for creating space in dental arches are categorized into two types: extraction and non-extraction methods. Recently, with the advent of new technologies, tooth extraction has been met with doubt by both dentists and patients. This has made the discussion between extraction and non-extraction methods an ongoing and perpetually relevant topic.The main objective was to compare the use of extraction vs non-extraction methods in orthodontic therapy from the point of view of the clinician. **Material and methods:** A survey containing 22 questions was distributed to orthodontists from the international community (n=204) in order to evaluate and compare the various characteristics related to the two major methods of treating dentomaxillary anomalies. **Results:** 52.5% of respondents state that they do not avoid dental extractions in current orthodontic practice. Among the non-extraction methods for gaining space in the dental arches, the most readily available and commonly used in current practice was Dental stripping (IPR-interproximalreduction), followed by Over-expansion. When it comes to the distalization of the lateral segments, the majority of responding clinicians state that they prefer biomechanics on mini-implants. 54.4% of clinicians noticed a tendency of space reopening after completing extraction orthodontic treatments **Conclusions:** The issue of dental extraction in orthodontics has been and will always be a current topic, as decision-making difficulties will continue to exist in borderline cases. Orthodontists currently use both methods in their practice and each of them has certain characteristics that makes them more suitable on the case in comparison to the other.

Keywords: orthodontists, dental extraction, dental stripping, survey

IMMEDIATE POST-EXTRACTION IMPLANT PLACEMENT - A NARRATIVE REVIEW

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Background: Even a single absent tooth has disruptive potential on the functionality of the dento-maxillary arches. Nowadays we prefer either to try by different specific means to restore the tooth to the optimal functional and biological status, or if that status is not achievable to perform extraction of the non-salvageable tooth with immediate implantation. The most important motivation for immediate implantation regards the limitation of alveolar bone resorbtion, well cited in literature and the possibility of immediate prosthodontic rehabilitation, which restores functionality of the edentulous space. To choose the optimal surgical approach and therapeutical plan it is necessary to know and apply biological and biomechanical requirements. Although still controversial, immediate post-extraction implant placement, has been a frequently implanto-prosthetic solution for surgical cases. **Material and methods:** This analysis was conducted by electronic search in PubMed and Embase using the keywords: implant, surgery and post-extractional implantation. We analysed original prospective longitudinal studies up to 2020. **Results:** Research data confirmed that unique surgery step that combine extraction, alveloar socket curretage and immediate implantation is a technique less harmfull for osseous and mucous support compared to that which apply the two-step technique, extraction followed by recovery time and delayed implantation after implant site bone consolidation. GBR techique is a very widely and commonly used approach for obtaining vertical and horizontal bone growth combined with different protocols such as I-PRF, autogenous and xenogenic grafts, a technique that applied in specific bone lose deffects has the potential to produce effective bone growth in different degrees and ensure the possibility of obtainig sufficient bone for implantation. All of the studies have shown the reality of bone enhancement in the implant site, better results for maxilla compared to mandible, different techniques having obtained different results. **Conclusions:** The correct management of the post-extraction sites, regarding osseous and mucosal management, is one key factor that concure to alveolar bone preservation, that ensure the optimal implant site and stabilize the result functionally and by biomechanical and aesthetic point of view. Choosing the correct technique and adapting the right protocols ensures stability for medium and long term, enable temporary prosthodontic treatment in order to recover complete functionality of the patient.

Keywords: immediate implantation, surgery, post-extraction bone preservation

EXAMINATION OF 3D PRINTED DENTAL MODELS IN TERMS OF DIMENSIONAL STABILITY WITH TIME

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Background: In our research, we investigatied the change of dimensional stability of 4 3D printed model construction type with time. By comparing the models to each other, we wanted to find the most suitable model building technique that causes the least deformation of the 3D printed model with time. **Material and methods:** Using a closed system BEGO Varseo S 3D printer (DLP technology), casts were printed from VarseoWax Model Grey resin (Bego, Bremen, Germany) in 0° building angle, 50 µm layer thickness and 405 nm wavelength light. The building strategies with different wall thicknesses were as follows: 2.5 mm hollow (2,5mm.H), 2 mm hollow (2mm.H), 2 mm hollow with bars (2mm.B) and 2 mm hollow with gypsum base (2mm.G). Back-scanning of the casts was performed on day 0 (reference STL), day 1, week 1, week 2 and week 10 using the E3 Red E Scanner (3Shape, Copenhagen, Denmark). The STL files were compared to the reference STL (day 0) and the deformation was measured using the Geomagic Control X surface fitting software (3D Systems, Valencia, California, USA). With the SPSS 23.0 software program, the results were statistically evaluated using the paired student's t-test. The significance level was set at $p \leq 0.05$. **Results:** After 10 weeks, there were significant differences between the printed models. The model with the lowest deformation was the 2mm hollow with stabilisation bars, while the model with the highest deformation was the 2mm hollow with gypsum base. **Conclusions:** Significant differences are observed between the different construction strategy types. Because of the differences, it may be worth considering which 3D construction technique do we use in practice.

Keywords: 3D printing, dental cast, DLP, building strategy

THE POSSIBLE CORRELATIONS BETWEEN SERUM LEVELS OF B12 VITAMIN, VAS, FOLIC ACID, HOMOCYSTEINE, AS WELL AS VITAMIN D3, AND THE OCCURRENCE OF XEROSTOMIA AND/OR SJÖGREN'S SYNDROME IN A LOCAL PATIENT POPULATION SUFFERING FROM THE CONDITION.

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Background: The deficiency of Vitamins D3 and B12, as well as inadequacy in folic acid or iron, may contribute to orofacial sicca symptoms such as dry mouth, migratory glossitis, and burning mouth. Additionally, these deficiencies might aggravate associated orofacial symptoms like mucosal atrophy or inflammation. However, there is limited knowledge regarding the serum levels of these laboratory parameters and homocysteine in individuals experiencing orofacial sicca symptoms and/or diagnosed with Sjögren's syndrome. It is recognized that patients with autoimmune disorders exhibit decreased levels of Vitamin D3 compared to healthy individuals, and this reduction is correlated with disease activity in systemic lupus erythematosus and rheumatoid arthritis. Furthermore, oesophageal and gastric mucosal alterations linked to orofacial sicca symptoms might lead to systemic symptoms and can impact the nutritional status and digestion of affected patients.This study aimed to assess potential differences in serum levels of Vitamins D3 and B12, folic acid, homocysteine, as well as iron, transferrin, and transferrin saturation between healthy Hungarian individuals and patients experiencing dry mouth and/or diagnosed with Sjögren's syndrome. **Material and methods:** Participants were categorized into four groups: healthy controls, individuals with xerostomia, those with hyposalivation, and patients diagnosed with Sjögren's syndrome. The presence of subjective symptoms like xerostomia and xerophthalmia was evaluated through a structured questionnaire. Objective assessment of hyposalivation was conducted using sialometry. Additionally, the diagnosis of Sjögren's syndrome was confirmed using the ACR-EULAR diagnostic system. **Results:** In the Sjögren's syndrome group (group 4), serum (Iron: Group 1: 36.24 ± 20.14 ng/ml, Group 2: 47.85 ± 26.84 ng/ml, Group 3: 42.04 ± 21.03 ng/ml, Group 4: 26.96 ± 7.53 ng/ml; $p<0.05$; Vitamin D3: Group 1: 36.24 ± 20.14 ng/ml, Group 2: 47.85 ± 26.84 ng/ml, Group 3: 42.04 ± 21.03 ng/ml, Group 4: 26.96 ± 7.53 ng/ml, $p<0.05$). However, Vitamin B12, transferrin, transferrin saturation, folic acid, and homocysteine levels did not significantly differ among any groups compared to healthy controls. **Conclusions:** While the serum level of Vitamin D might correlate with autoimmune inflammation in Sjögren's syndrome, reduced serum iron values may likely be associated with oral and gastroesophageal mucosal health, absorption, or nutritional issues.

Keywords: Sjögren Syndrome, Immunology, D3 vitamin, Nutrition, Xerostomia

DENTAL IMPRESSION TRAYS: PRESENT AND FUTURE

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Background: Due to the increasingly rapid evolution of technology in dentistry, most dentists have replaced conventional impressions with impression trays with digital impressions using the intraoral scanner **Material and methods:** With the help of Google Forms, we conducted a questionnaire to see the opinions of dentists both in Romania and abroad about the use of dental impressions in the digital age. The questionnaire was completed by 107 doctors with different specialties, the vast majority of them being general dental practitioners, more than half of them being women falling in the category of average age 24-39 years, predominantly from Romania. Among the questions of the questionnaire are "How often do you use the impression trays, do you consider them useful?" or "How do you consider that digital technology has evolved in dental impressions and what impact do you think it has on the use of impression trays?". The questionnaire was distributed both online and physically in some dental clinics and practices across the country. **Results:** More than 95% of doctors still consider that impression trays play an essential role in their practice, and a third of them say that they use them often in their practice. The vast majority use metal holders, with a small difference being plastic holders. A fairly high percentage of doctors, about 70%, consider that impression trays are useful in certain clinical situations but can be successfully replaced by digital technology. **Conclusions:** The impression trays are indispensable in practical work and can coexist with digital technology, certain situations still require conventional dental impression.

Keywords: impression trays ;, digital impressions;, questionnaire;, preferences;

ANALOG DENTAL IMPRESSION AT THE HEIGHT OF THE DIGITAL AGE

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Background: The dental impression is the dentist's signature, as it is the main means of transmitting information to the dental laboratory. Good work starts with a good impression. **Material and methods:** In order to highlight the occurrence of errors, we carried out a series of preclinical impressions on an acrylic didactic model, with various types of silicones, but also with alginates, these being the most used for study models and for the impression of antagonists. We used standard impression trays, mixing pads, dispensers, cartridge guns and applicators, disposable syringes for silicones, but also an automatic mixing machine - turbomix. However, for alginate, we used both manual mixing tools - rubber ball and spatula - and specific equipment such as semi-automatic and automatic mixing machines. Using the Shark-fin device we followed the rheological parameters of the elastomers and their changes during the setting reaction, and for the alginate, we followed the quality of the resulting impression and pattern **Results:** In the case of Zhermack's Oranwash L condensation reaction silicone, the Shark-fin device recorded a fin height of 10 mm compared to the fin height using Zhermack's Elite HD+ addition reaction silicone of 13 mm. Thus, the main errors that can occur when using silicones are related to the use of non-conforming trays, incorrect preparation of silicone elastomers and alginates, insufficient adhesion of silicone material and the impression tray, and the danger of extracting teeth with grade IV mobility. **Conclusions:** Addition reactive silicones shows better rheological properties compared to condensation reactive silicones, possible errors could be avoided by following the manufacturer's instructions, but also by using special semi-automatic and automatic mixing systems.

Keywords: impressions;, silicones;, alginate;, rheological-properties;, mixing systems

FINISHING: THE KEY ELEMENT OF A LASTING RESULT

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Background: Aesthetics play an essential role, especially in anterior restorations. Finishing is the stage that restores both the filling to the appearance closest to the natural tooth and the gloss in the case of acrylic complete dentures. **Material and methods:** The finish ensures the integration and strength of both fillings and acrylic complete dentures, with the patient feeling comfortable with the new change. The smoother the surface, the more durable it becomes. For finishing we used brushes, gums, stones, and discs. One of the most effective methods is the use of polyester abrasive tape in the interdental areas, respectively the brush for the external surface of the prostheses. Aluminum oxide abrasive discs complement abrasive tapes, providing a complete finish. The finish is dependent on the microstructure, size, and shape of the material. For the finishing technique, we applied moderate and controlled pressure, and the speed was adapted to the material. Lubricants were used to avoid overheating and achieve a precise result. Technically, it is easier to control the level of abrasion by adjusting the speed compared to the pressure applied. Good coordination between them ensures a smooth transition between tooth structure and filling material. **Results:** The finest surfaces are obtained using abrasive discs, but it is very important to respect the sequence of abrasive discs. Gums and brushes also help to finish the surface but not so significantly compared to abrasive discs. Brushes provide the gloss after the finishing part of the abrasive discs. **Conclusions:** There are many methods of finishing but it is important that the materials used be adapted to the processed surface and not to affect the integrity of the surface after use. Finishing is an important essential step in preventing infiltrations of fillings and complete dentures.

Keywords: fillings;, complete dentures;, finishing;, abrasive discs;

AN OVERVIEW REGARDING THE LINK BETWEEN OBESITY AND PERIODONTITIS

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Background: Introduction. Overweight and obesity, defined as abnormal or excessive accumulations of fat, are considered major risk factors for several chronic diseases, including periodontitis. The mechanism by which obesity affects periodontitis is still debated. Objectives. The aim of this study is to summarize existing sources of information and contextualize them within a systemic disease framework to highlight a holistic view of the link between obesity and periodontal disease. **Material and methods:** In this review, we will outline some of the current advances and current overview of the relationship between periodontitis and associated obesity with some biological characteristics at the biological and the functional level. **Results:** Obesity is associated with chronic low-grade systemic inflammation. Evidence from animal and human studies shows a clear link between weight regulation and inflammation, with function abnormalities, including serum levels of cytokines or peripheral blood lymphocyte subpopulation levels. Obesity increases the levels of cytokines, oxidative stress, and level of periodontal pathogens, and can lead to diabetes mellitus, increasing the prevalence of periodontitis. Environmental and genetic factors modulate both diseases. **Conclusions:** There is significant evidence linking obesity to the prevalence of periodontitis. The magnitude and mechanisms of this association require further clarification. More prospective investigations are needed to confirm the underlying pathophysiological pathway in the association between obesity and periodontitis.

Keywords: obesity, periodontitis, chronic systemic inflammation.

ENT (OTORHINOLARYNGOLOGY)

DYSPHAGIA IN CHILDREN

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Background: Dysphagia always has an important impact on children's development, because it is a disorder of the swallowing process and secondary to this condition can occur serious complications. Children affected by dysphagia are from newborn to young adult. The aim of our study is to draw attention to the importance of recognizing and treating this category of patients quickly in order to reduce the occurrence of complications and comorbidities caused by dysphagia. In this paper we will present the causes of dysphagia in children and their management. **Material and methods:** For this study we processed the data obtained from 50 studies in the literature and compared them with personal case studies. In these studies we analyzed the methods of diagnosis and treatment of dysphagia in children. We statistically analyzed the data obtained. **Results:** The most common causes of dysphagia in children in our case studies were neurological disorders, gastroesophageal reflux disease, food allergies and ingestion of foreign bodies. The literature relates the most common cases to premature babies, followed by children with diseases / malformations of respiratory and digestive pathways, respectively children with neurological disorders. In our case study the most severe and frequent pathological situation in which acute dysphagia appeared was represented by the ingestion of esophageal foreign bodies that were also caused by emergencies. Complications of dysphagia have been from mild to severe conditions such as severe pneumonia to respiratory distress and death. Case resolution was very extensive from conservative to surgical treatments. **Conclusions:** Dysphagia in children affects the quality of life, their development and in most cases are diseases that produce severe comorbidities with irreversible or difficult to reversible important repercussions, therefore it must be recognized quickly and treated early in order to avoid the occurrence of these severe complications.

Keywords: dysphagia, children, swallowing

CSF GUSHER, A COMPLICATION OF COCHLEAR IMPLANT- CLINICAL CASE

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Background: The CSF gusher represents a sudden extravasation of the cerebrospinal fluid at the time of the cochleostomy, surgical time prior to the insertion of the cochlear implant. Before the cochlear implant era, this was called perilymphatic gusher. Physiologically, the CSF is separated from the perilymph by the cribriform plate, physiology that can vary in patients with cochlear malformations. **Material and methods:** Patient ME, age 48, known to have profound bilateral acquired sensorineural hearing loss, right VII nerve palsy, arachnoid cyst, is hospitalized for cochlear implant surgery at the right ear. Computed tomography suggests a malformed right cochlea **Results:** In orotracheal intubation under general anesthesia, all operative steps were performed up to the moment of opening the cochlea through the round window, without intraoperative complications. Perforation of the round window membrane revealed a massive CSF gusher that reduced in quantity within a few minutes of waiting as per protocol. Insertion of the implant through the round window, fixing it and closing the gusher with bone wax and subcutaneous adiposetissue were performed immediately. Mannitol treatment was instituted and the patient was positioned in decubitus position at 45degrees in the ICU for observation. At 24 hours postoperatively, the patient presents with headache, nausea, which resolves under symptomatic treatment, without externalization of CSF at the level of the external auditory meatus. At 48 hours postoperatively,the patient presents right rhinoliquorrhea in minimal amount when bending the head, which stopped spontaneously, without externalization at the level of the bandage, due to the intraoperative accumulation of a quantity of CSF at the level of the middleear that externalizes through the right Eustachian tube, which is permeable. **Conclusions:** CSF gusher is a rare intraoperative complication, but specific to cochlear malformations, which can be anticipated but not quantitatively and requires specific intra- and post-operative treatment.

Keywords: gusher, hearing loss, cochlear implant

EPIDEMIOLOGY

THE IMPACT OF COVID-19 ON HEALTHCARE-ASSOCIATED INFECTIONS WITH CLOSTRIDIOIDES DIFFICILE: A STUDY FROM MURES COUNTY

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Background: *Clostridioides difficile* has become the predominant source of healthcare-associated infections (HAI) enterocolitis, showing a rising trend in both frequency and severity in recent years. With the onset of the COVID-19 pandemic and the overcrowding of hospitals, there was an increase in HAI cases, contrary to the prevention and control measures established during this period. **Material and methods:** We performed a cross-sectional study using data supplied to the Mures Public Health Directorate from all public hospitals in this county. We analyzed HAIs reported between 2017 and 2021, totaling 4603 cases. **Results:** The predominant infections included enterocolitis associated with *Clostridioides difficile* (32.61%), COVID-19 (19.83%), bronchopneumonia (16.90%), as well as sepsis, surgical wound infections, and urinary tract infections. The top five pathogens frequently identified were *Clostridioides difficile* (32.61%), *SARS-CoV-2* (19.83%), *Acinetobacter baumannii* (11.82%), *Klebsiella pneumoniae* (9.58%), and *Pseudomonas aeruginosa* (7.95%). *Acinetobacter baumannii* emerged as the primary cause of bronchopneumonia, while *Klebsiella pneumoniae* was the leading agent in sepsis cases. *Escherichia coli* played a pivotal role in urinary tract infections, and *Staphylococcus aureus MRSA* was identified as the primary culprit in wound infections and central catheter infections. Notably, throughout the study period, there was a significant increase in *Clostridioides difficile* cases, constituting 40.36% of all reported HAIs in 2021. **Conclusions:** The research highlights a rise in HAI cases involving *Clostridioides difficile* during the COVID-19 pandemic. It emphasizes previous studies that suggest immunological changes caused by *SARS-CoV-2* in the gastrointestinal tract, increasing vulnerability to this opportunistic pathogen, and highlighting the need for careful antibiotic use.

Keywords: Clostridioides difficile, COVID-19, healthcare-associated infections

THE FIRST TWO YEARS OF THE COVID-19 PANDEMIC IN MUREȘ, HARGHITA AND COVASNA COUNTIES - A CLINICAL-EPIDEMIOLOGICAL STUDY

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Background: Romania reported the first cases on its western border at the end of February 2020. The state of emergency was declared on March 16, and on March 26, the total number of confirmed cases exceeded 1,000. Seroprevalence surveys have suggested that the rate of prior exposure to SARS-CoV-2 exceeds the incidence of reported cases by approximately 10 times or more. The premises of the research start from the importance of identifying, defining and quantifying the burden of the COVID-19 pandemic in our country, especially in the central area, to understand the impact of this crisis on public health. **Material and methods:** We performed a retrospective observational study analyzing data from the Corona-Forms platform of patients admittedto public hospitals with SARS-CoV-2 infection during the period of 26.02.2020-26.02.2022. The data were made available by the Public Health Department of Mureș, Covasna and Harghita counties. Study group size: 24633 people. **Results:** More female persons were identified, 98% of the lot being Romanian citizens. The average age of the identified persons was 61 years (min <1 year, max 99 years). The highest frequency was in the 61-80-year-old age group. 45% of the admitted people were retired, and12% of the employees were registered as healthcare workers. Most cases were hospitalized in 2021, and as the month, the 10thmonth. The epidemiological link was registered in over 6% of cases. 15% of the study sample had one or more comorbidities.Antivirals were administered to 31%, anticoagulants to 51%, corticosteroids to 29%, and oxygen therapy to 6%. 16% died, withan average age of 71 years. **Conclusions:** The Corona-Forms Platform made available to the Public Health Departments was an efficient and timely way of reporting during the pandemic. The need for hospital isolation and severe illness occurs predominantly in older adults or certain underlying medical comorbidities.

Keywords: COVID-19, public health, epidemiology, incidence

FORENSIC MEDICINE

THE ROLE OF EDUCATION IN DOMESTIC VIOLENCE IN MUREŞ COUNTY

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Background: The issue of domestic violence is of global importance, and it affects all social categories. Research has indicated that females are more likely to be victims of domestic violence than males. A risk factor associated with domestic violence is the discrepancy between education, income, or occupational status between partners. **Material and methods:** We carried out a retrospective study on the phenomenon of domestic violence in Mureș County, through the forensic medicine office of the Medico-Legal Institute of Târgu Mureș, among the persons who required a medico-legal certificate between 2019-2021. **Results:** In the studied period we identified 305 victims of domestic violence who solicited medico-legal certificates. Most of the victims were females (80%) from urban area, with the age less or egal to 50. We found ten people who didn't know how to read or write. In their case the medical examiner applied the method of fingerprinting the index to confirm that they have taken note of what is stipulated in the application form for the medico-legal certificate and that they agreed to be physically examined. **Conclusions:** Domestic violence does not discriminate when it comes to victims, and risk factors such as a victim's education level merely act as tools to help practitioners identify those people who are more likely to be affected than others.

Keywords: education, domestic violence, medico-legal certificate, victims of domestic violence

GENETICS

COPY NUMBER VARIATIONS ANALYSIS OF ABCA3 AND SFTPC GENES IN NEONATAL RESPIRATORY DISTRESS SYNDROME

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Background: Surfactant deficiency is recognized as the primary cause of respiratory distress syndrome (RDS), a complex condition associated with significant neonatal morbidity and mortality in preterm infants. Genetic variants impacting surfactant synthesis and metabolism contribute to neonatal respiratory failure and interstitial lung disease in children. **Material and methods:** We conducted multiplex ligation-dependent probe amplification (MLPA) analysis to assess copy number changes (CNCs) in 39 patients diagnosed with RDS using the SALSA MLPA probemix P314-A1 ABCA3-SFTPC. This kit targets 33 exons of the ATP-binding cassette subfamily A member 3 (ABCA3) gene located on chromosome 16p13.3 and 6 exons of the surfactant protein C (SFTPC) gene located on chromosome 8p21.3. The probemix was employed in conjunction with the SALSA MLPA reagent kit, and data analysis was performed using Coffalyser.Net software. **Results:** The majority of dosage quotients for individual reference probes in our study fell within the range of 0.80 to 1.20, as stipulated and expected according to the product description. Our findings indicated a reduced signal probe for the ABCA3 gene, encompassing exons 9 and 14, and in two patients exhibiting abnormalities in exon 15. Additionally, a signal abnormality, characterized by a decreased final ratio, was observed in exon 1 of the SFTPC gene. Most alterations in the SFTPC and ABCA3 genes manifest as point mutations, underscoring the importance of confirmation through alternative molecular techniques or target sequencing, whenever feasible. **Conclusions:** Given the results obtained, using MLPA analysis in newborns with surfactant deficiencies and respiratory distress syndrome remains a matter of discussion. Consequently, more extensive cohort studies are essential for relevant and conclusive findings.**Funding**: This work was supported by the University of Medicine, Pharmacy, Science and Technology "George Emil Palade" of Targu Mures Research Grant number 10127/20/17.12.2020.

Keywords: MLPA, neonatal respiratory distress syndrome, surfactant

THE ROLE OF MICRORNA IN CYSTOGENESIS - A CASE PRESENTATION OF A PEDIATRIC PATIENT DIAGNOSED WITH MULTIPLE RENAL CYSTS

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Background: Renal cysts in pediatric patients are part of a diversity of hereditary or non-hereditary conditions, and in some cases, those can lead to renal failure. The role of microRNAs has been proven to be extremely important in the appearance of renal cysts; therefore, it is essential to know their precise involvement in the evolution and progression of renal cystic disease. Moreover, microRNA inhibitors' role in stopping the evolution of cystogenesis has also been emphasized; therefore, these inhibitors could be useful as possible therapeutic agents. **Material and methods:** We present a case of a 6-year-old patient diagnosed with multiple renal cysts detected by ultrasound. NGS analysis detected a pathogenic heterozygous variant c.1443+1G>A, using Illumina TruSight One Sequencing Panel, a panel including 4813 genes. **Results:** In the first days of life, echocardiography revealed a cardiac tumor that was removed by surgery a few months later; subsequent, numerous controls were carried out that led to the detection of multiple renal cysts. Laboratory findings were within normal range except for a high level of ascorbic acid identified in urine. **Conclusions:** In conclusion, it is essential to diagnose pediatric patients with multiple renal cysts accurately in the early stages to prevent renal failure; moreover, microRNA studies are needed to determine those microRNAs involved in the pathogenesis of renal cystogenesis in pediatric patients, as the microRNA inhibitors could be possible therapeutic targets.

Keywords: Pediatric renal disease, microRNA, cystogenesis, NGS analysis

THROMBOSIS AND CARDIOVASCULAR RISK FACTORS AMONG PATIENTS WITH MYELOPROLIFERATIVE NEOPLASMS

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Background: One of the most important causes of disability and death of myeloproliferative neoplasms (MPNs) patients is considered to be thrombosis. *Janus kinase 2* (*JAK2) (p.V617F*) and *Calreticulin (CALR)* mutations are important in the genesis of thrombosis, as the former increases and the latter decreases the risk of thrombosis. Cardiovascular (CV) risk factors include hypertension, diabetes, hyperlipidemia, diabetes, obesity and smoking. **Material and methods:** 393 patients with Polycythemia vera (PV), essential thrombocythemia (TE) and primary myelofibrosis (PMF) were included in the study. 118 (30.02%) subjects had at least one episode of major thrombosis and 225 (69.98%) subjects had no vascular episodes. Genomic DNA obtained from peripheral blood was used to identify *JAK2 V617F* and *CALR* mutations. **Results:** *JAK2 V617*F mutation was significantly associated with thrombosis ($p<0.0001$, OR- 2.88; 95%CI= 1.187-4.447). Also, *CALR* mutation was associated with major thrombosis ($p=0.025$, OR- 2.62; 95%CI= 1.136-6.044). The univariate analysis indicated that hematocrit (HCT) ≥48% represents a risk factor for thrombosis in the MPNs group. **Conclusions:** The presence of *JAK2 V617F* mutation increased the thrombotic risk. In our study, CV risk factors did not influence the occurrence of thrombosis.

Keywords: thrombosis, JAK2V617F, myeloproliferative neoplasms, CV risk factors

HEMATOLOGY

STUDY ON CHANGES IN BIOCHEMICAL AND HAEMATOLOGICAL PARAMETERS IN DIFFERENT TYPES OF ANAEMIA

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[2],

Background: Anaemia affects one third of the world's population and contributes to increased morbidity and mortality. Paraclinical evaluation is important for the proper management of anemic patients. **Material and methods:** A retrospective observational study was conducted using the Mures Emergency County Clinical Hospital's database by selecting patients diagnosed with macro- or microcytic anaemia hospitalized between January 2021 and March 2023. Haematological parameters (complete blood count) and biochemical test results (serum iron, magnesium, vitamin B12) were evaluated. GraphPad InStat3 was used for statistical processing of the data. **Results:** The study group consisted of 124 patients of which 68.5% were diagnosed with microcytic and 31.5% with macrocytic anaemia. Mean age of the subjects was 57.1 years (± 21.14 SD). 52.8% of the patients with microcytic anaemia had below normal serum iron levels, iron deficiency occured in 17.9% of those having macrocytic anaemia (p=0.04). Patients diagnosed with microcytic anaemia had a mean magnesemia of 1.486 mmol/L (± 0.5746 SD), significantly higher (p=0.0413) than patients diagnosed with macrocytic anaemia: 0.996 mmol/L (± 0.3826 SD). 40% of patients with microcytic anaemia and 56.3% of patients with macrocytic anaemia had vitamin B12 value below normal. A significant difference (p=0.0194) was observed in the distribution of haemoglobin values in the two subgroups, the percentage of critical values (Conclusions: It is important to monitor these biochemical and haematological parameters in anaemic patients to reveal deficiencies of minerals and vitamins which influence the therapeutical decision.

Keywords: macrocytic and microcytic anaemia, iron deficiency, vitamin B12

MEAN CORPUSCULAR VOLUME AND HEMOGLOBIN CONCENTRATIONS REVEALING VARIATIONS ACROSS GENDER AND AGE CATEGORIES WITHIN THE ANEMIC PATIENT POPULATION

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Background: There are various risk factors for anemia, which include age and gender, influencing hemoglobin concentration. However, the changing trend of hemoglobin levels between males and females with age remains unclear. **Material and methods:** A retrospective observational study was conducted using the Mures Emergency County Clinical Hospital's database by selecting patients diagnosed with anemia hospitalized between April - June 2023. Hematological parameters were evaluated (hemoglobin-Hb, mean corpuscular hemoglobin-MCH and mean corpuscular volume-MCV) and compared according to gender and age. GraphPad InStat3 and Medcalc were used for statistical processing of the data. **Results:** The study group consisted of 1135 female and 951 male patients diagnosed with anemia. Men diagnosed with anemia presented a mean MCV value of 90.32 (± 10.74 SD) fl, which is significantly higher (p=0.0001), than the MCV observed in women, 86.34 (± 10.22 SD) fl. This was also evident in the senior patients group, men exhibited a significantly higher (p=0.0015) MCV at 90.45 (± 10.30 SD) fl compared to women with an MCV of 87.92 (± 10.18 SD) fl. Examining the Hb across various age groups among women, young women presented a mean Hb of 10.51 (± 1.44) g/dl, while middle aged women had a significantly lower (p=0.0129) value of 10.10 (± 1.83) g/dl. Hemoglobin levels were significantly higher (p=0.0001) in younger females when compared to their senior counterparts: 10.06 (± 1.72) g/dl. Also a significant difference (p=0.0001) was observed in the rate of anemia according to age, with a higher occurrence among the elderly compared to the younger population, noted across both genders. **Conclusions:** Anemic males demonstrated higher MCV compared to females, and this trend persisted among senior patients, revealing the higher incidence of macrocytic anemias in males. When examining hemoglobin concentrations in women across different age groups, younger females exhibited higher levels than both middle-aged and senior counterparts.

Keywords: mean corpuscular volume, hemoglobin, anemia, gender, age groups

IMMUNOLOGY

PROINFLAMMATORY CYTOKINES AS BIOMARKERS FOR SURGICAL COMPLICATIONS AND TREATMENT OUTCOMES IN GASTRIC CANCER: A SYNTHESIS OF RECENT RESEARCH

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Background: Anastomotic fistulas can occur after surgery for gastric cancer and can influence the patient's outcome. Therefore, finding biomarkers that can help predict these complications after surgery is crucial. Inflammatory cytokines have been suggested as potential predictors, as more research has been conducted to fully understand their role in this pathology. **Material and methods:** The purpose of this review is to analyze existing research on the status and impacts of cytokines, specifically IL-1 beta, IL-6, IL-10, and TNF alpha, in the treatment and management of gastric cancer. The main objective was to evaluate the potential of these cytokines in the development and progression of the disease, as well as their use as indicators for prognosis. For the literature review, PubMed was used as the primary search engine using the terms-Proinflammatory Cytokines/Gastric Cancer/Biomarkers as keywords. Only studies published in the last five years (2019-2023) were included, except for case presentations. **Results:** Recent studies have highlighted the role of cytokines such as IL-1 beta, IL-6, IL-10, and TNF alpha in cancer. These cytokines have been identified in 30 articles as potential markers for diagnosing and predicting prognosis of gastric cancer. Moreover, they play a role in tumor progression and resistance to treatment. Specifically, IL-1 beta has been linked to reduced effectiveness of immunotherapy, while IL-6 is considered a biomarker that affects the impact of cancer on the body. Additionally, genetic variations in IL-10 are associated with increased vulnerability and adverse outcomes, while TNF alpha is implicated in tumor growth and systemic invasion. **Conclusions:** To summarize these findings, 30 studies have provided evidence supporting the significance of IL-1 beta, IL-6, IL-10, and TNF alpha in gastric cancer development and treatment outcomes, playing a crucial role in the disease progression and responsiveness to therapy.

Keywords: GASTRIC CANCER, PROINFLAMMATORY CYTOKINES, BIOMARKERS

BIOMARKERS OF FIBROSIS IN THE EVALUATION OF CARDIAC RESYNCHRONIZATION THERAPY RESPONSE

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Background: Cardiac resynchronization therapy (CRT) is a significant part of treatment in selected patients with chronic heart failure (CHF) with reduced ejection fraction. In pursuit of optimizing CRT response, the identification of key biomarkers that reflect the underlying processes of myocardial fibrosis is essential. In our literature review, we aimed to briefly examine the current landscape of research on the role of fibrotic biomarkers for predicting CRT outcomes. **Material and methods:** We conducted a systematic search using the PubMed database to identify studies concerning predictive biomarkers published in the last 10 years. Out of 290 articles retrieved and evaluated based on the abstract, 70 articles were analyzed in full to meet the determined inclusion criteria. For the final literature review we included 7 articles focusing on the predictive role of markers of fibrosis for CRT outcomes. **Results:** In CHF patients, myocardial injury triggers fibrotic remodeling, leading to adverse cardiac structural alterations and therefore impacting CRT response. Galectin-3 (Gal-3) and soluble ST2 (sST2) emerge as the main biomarkers reflecting fibrogenesis. Studies suggest the potential of Gal-3 as a predictor of long-term CRT outcomes, with conflicting associations with echocardiographic response. sST2, acting as a decoy receptor, is considered a marker of deleterious fibrotic remodeling. Collagen turnover markers and GDF-15 also exhibit potential for predicting CRT response. **Conclusions:** Conclusions: These findings highlight the complexity of fibrosis dynamics in CRT and the need for further research to elucidate the predictive role of fibrotic biomarkers in the context of CRT outcome optimization.Acknowledgement: The current work was supported from grant no.15609/4 of December 29th 2017 from the "G.E. Palade" Universityof Medicine, Pharmacy, Science and Technology of Targu Mures.

Keywords: biomarkers, cardiac resynchronization therapy, myocardial fibrosis

INFECTIOUS DISEASES

LYMPHOCYTE PROFILE AND COVID-19 SEVERITY

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Background: In COVID-19 hyperinflammatory responses can cause cytokine storm leading to subsequent exhaustion of immune cells. Lymphocytes play a crucial role in adaptive immune response. We aimed to investigate whether impairment of lymphocyte profiles correlates with disease severity and outcome. **Material and methods:** We conducted a prospective study, that included 56 COVID-19 patients, confirmed by a positive RT-PCR test for SARS-CoV-2, admitted to the 1st Infectious Disease County Hospital Târgu Mureș between November 2021 to March 2022. In our cohort 27(50.9%) patients were male, with a mean age of 71 years. 6(11.3%) patients had mild, 14(26.4%) moderate, 33(62.3%) severe COVID-19; 42(79.2%) survived, 11(20.7%) died. 14(26.4%) of them were vaccinated. We evaluated the lymphocyte profiles and their dynamic changes (on the 1st, 5th, and 10th days of admission) during hospitalization, correlated with disease severity and outcome. Statistical analyses were performed using MedCalc® Statistical Software version 20.104. **Results:** Our study found that the absolute total lymphocytes count(p=0.001), CD3+cell count(p=0.001), CD3+CD4+(p<0.0001), CD3+CD8+(p=0.048) and natural killer(NK) percentage(p=0.040) were significantly lower in severe forms of COVID-19. However, there was no significant difference between absolute NK and CD19+cells in relation to disease severity (p=0.100,p=0.924). Significant differences were noted between severity groups and dynamic changes of CD3+CD4+ for day1(p<0.0001), day5(p=0.072), day10(p=0.045), with less prominent for CD3+CD8+ cells for day1(p=0.048), day5(p=0.410), day10(p=0.121) and percentage of NK cells for day1(p=0.041), day5(p=0.024), day10(p=0.193). Also, CD3+,CD3+CD4+ lymphocyte subsets showed statistically significant differences regarding outcome (p=0.023,p=0.038). **Conclusions:** We found significant differences in the lymphocyte profile on the first day of admission in severe COVID-19. The dynamic evaluation of lymphocyte subsets showed a significant decrease in patients with severe disease. The absolute number of CD3+ and CD3+CD4+ lymphocytes was significantly lower in non-survivors. This research is part of the doctoral thesis within IOSUD of G.E.P. UMPST TgM. Doctoral School. This work was funded by G.E.P. UMFST TgM, grant number 10126/1/17.12.2020

Keywords: COVID-19, lymphocyte profile, severity, fatal outcome

INTERNAL MEDICINE

DOES THE LONG-TERM THERAPY WITH LANADELUMAB ENSURE A GOOD CONTROL OF THE DISEASE IN PATIENTS WITH HEREDITARY ANGIOEDEMA FROM ROMANIA?

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Background: To achieve a complete control in patients with hereditary angioedema, long-term prophylactic therapy should be used. The kallikrein inhibitor Lanadelumab is a new innovative drug used for this purpose. Our study evaluated the changes of disease control in HAE patients from our country during the first year of treatment with this new therapy. **Material and methods:** It was a noninterventional survey of patients with HAE from Romania who were included in the long-term prophylaxis treatment program with Lanadelumab between September 2022 and August 2023. During this one year period, the Angioedema Control Test (AECT) was completed by the enrolled patients. The questionnaire was adminstered initially before the first dose administration, and than, every three month. An interim analyzes was performed to assess the impact of Lanadelumab on disease control. **Results:** In the evaluated period a total of 22 patients were included in the long-term prophylaxis therapy with Lanadelumab, 14 (63.6%) female and 8 (36.4%) male, with the mean age of 42.5 years. Most patients (77.3%) belonged to the age group of 18-45 years and had HAE type I (88.3%). The on-demand, home-administered therapy was available for all patients. Eight patients used intravenous long-term prophylaxis therapy too, with plasma-derived C1-inhibitor, which was switched to the new drug. Except one patient, all the others had un inadequate controle of the disease (AECT< 10) at the first evaluation. On Lanadelumab treatment this score showed a controlled status (AECT≥ 10) in 21 patients and this status was maintained during the whole evaluated period. Six patients became symptome-free from the first dose of Lanadelumab. **Conclusions:** In chronic illnesses the control of the disease is an important measure because it can support treatment decisions and help assess patient responses to prophylactic therapy. The kallikrein inhibitor monoclonal antibody Lanadelumab ensure a good control of the disease in HAE patients from Romania.

Keywords: angioedema, hereditary angioedema, angioedema control, questionnaire

COMPLETE BLOOD COUNT DERIVED INFLAMMATION INDEXES IN A MURINE EXPERIMENTAL MODEL OF VENOUS THROMBOSIS

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Background: Immunothrombosis refers to the role played by immune cells during thrombus formation. Immune inflammatory indexes derived from Complete Blood Count (CBC) analysis, such as neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR) and systemic immune-inflammation index (SII) (defined as platelet x neutrophil divided by lymphocyte count) are novel inflammation indexes that may be usefull in monitoring the immunothrombosis phenomenon and the way different therapies may interfere. **Material and methods:** An experimental murine model of venous thrombosis, by applying a continuous electrical current to the exposed surface of the femoral vein, was attempted in 16 female rats, aged 15-16 months, randomized in two groups (n=8 animals / group), anticoagulated post-intervention with Enoxaparin, respectively Rivaroxaban. One week after surgery all animals were euthanised. Blood was sampled from each animal prior to the intervention (moment T1), and post-intervention (at moment T2 – one day after surgery, respectively moment T3 – seven days post-intervention) for CBC analysis and immune inflammatory indexes calculation. **Results:** NLR values, in the Enoxaparin group, registered a statistically signifficant increase at moment T3 compared to T1; in the Rivaroxaban group, no statistically signifficant variation was observed. PLR values, in the Enoxaparin group, registered a statistically signifficant increase in evolution; in the Rivaroxaban group, PLR values were statistically signifficantly higher at moment T3 compared to T2 and T1. SII values, in the Enoxaparin group, registered a statistically signifficant increase at moment T3 compared to T1; in the Rivaroxaban group, no statistically signifficant variation was observed. When comparing the two anticoagulant regimens, no signifficant difference for NLR, PLR and SII values was observed in Enoxaparin versus Rivaroxaban groups at moment T3. **Conclusions:** Rivaroxaban anticoagulation might have a benefic effect on thrombosis related inflammation reduction, as shown by a non-modification of CBC-derived inflammatory indexes NLR and SII in a murine model of deep vein thrombosis.

Keywords: inflammation indexes, neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), systemic immune-inflammation index (SII), immunothrombosis

ANEMIA AND UPPER DIGESTIVE ENDOSCOPY - CLINICAL AND PATHOLOGICAL CORRELATIONS

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Background: Precursor lesions to gastric adenocarcinoma (gastric atrophy and intestinal metaplasia) are more prevalent in older populations in the region with a high prevalence of H. pylori infection. Anemia is a condition associated with infection, oftenlinked to several comorbidities. This study attempts to determine the value of clinic, endoscopic, and histologic variables that maypredict anemia in patients without bleeding signs or lower gastrointestinal disorders. **Material and methods:** The study enrolled306 patients with anemia and 348 patients without who underwent esophago-gastroduodenoscopy for dyspeptic symptoms. **Results:** 95 patients had mycrocytic anemia, 196 normocytic, and 15 macrocytic anemia according to the MCV value. Weight loss (p=0.006, OR 3.1, 95% CI 1.3-7.3) was found to be predictive of anemia along with premalignant gastric lesions, while epigastric pain and heartburn were more prevalent in non-anemic patients. Oral anticoagulants (p=0.02, OR 2.8) increased the odds of anemia 2.2 times in the presence of premalignant lesions, but antiplatelets did not. Anemic patients with premalignant gastric lesions presented more often gastric erosions (p<0.001, OR 3.0,95% CI 2.5-6.8), gastric ulcers (p<0.001, OR 7,4,95% CI 3.3-16.2) as well as non-infectious chronic gastritis (p<0.001, OR 7.8 95% 3.7-16.2), but not reactive gastropathy or active H. pylori infection. Chronic kidney disease was found to be an independent predictor of anemia, along with premalignant gastric lesions, in patients over 65 years old. Even with a negative history of kidney disease, antivitamin-K continued to predict anemia (p=0.04, OR 1.9). Gastric erosions (p<0.001, OR 3.9), gastric ulcers (p<0.001, OR 9.6), and non-infectious chronic gastritis (p<0.001, OR 7.0) can independently predict anemia in these patients. **Conclusions:** Chronic inactive gastritis is a predictor of anemia even in the absence of chronic kidney disease. Antivitamin K therapy continued to be predictive of anemia, regardless of CKD status. Weight loss predicts anemia, but not epigastric pain or heartburn.

Keywords: premalignant gastric lesions, anemia, chronic gastritis

ETIOLOGY AND IMPACT OF REST-ACTIVITY RHYTHM DISTURBANCES ON GLYCEMIC OUTCOMES AND SELF-CARE BEHAVIOUR IN TYPE 1 DIABETES

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Background: Circadian rhythm misalignment is a less discussed, lifestyle-related risk factor of suboptimal metabolic management and diabetes outcomes. High glycemic variability and poor sleep quality are common, interrelated features of type 1 diabetes (T1D) leading to increased severity of diabetes distress and cognitive deficit, directly influencing self-care behaviours too. **Material and methods:** A literature review was performed on PubMed and Web of Science between September and November of 2023 using multiple search items, including: type 1 diabetes, circadian misalignment, sleep disturbances, self-care. We included 37 studies involving 6.372 T1D patients that discussed specific etiological factors leading to sleep-wake cycle misalignment and the impactof rest-activity rhythm disturbances on glycemic and psycho-cognitive outcomes. **Results:** Suboptimal sleep quality was present in31-48% of T1D patients . Multiple etiologic factors related to glycaemic control, diabetes complications, comorbidities , self-management and self-care tasks contributed to sleep disturbances and high sleep variability in T1D. Peripheral insulin resistanceand glucoregulation is affected by sleep duration. Self- reported and actigraphy measurements of higher sleep length (>6 hours) was associated with lower HbA1c (–0.24%, 95% CI =–0.47,–0.02), more frequent self-monitoring of blood glucose and additional insulin bolus administration. Nocturnal hypoglycemic events were freqvent and had a negative influence on sleep architecture even if main phases were not interrupted. In sleep deprivation , recovery period after hypoglycemia and of resulting cognitive dysregulation were prolonged ($p<0.001$), next day functioning was influenced. Hyperglycemia was associated with lower overnight melatonin excretion.(HMG 17.68 ± 3.713 ng/mL vs C 35.23 ± 6.407 ng/mL). Non-parametric circadian parameters assessed by actigraphy showed that a stronger circadian rhythm adherence was associated with less hyperglycemia risk, lower diabetes distress and better executive function($p<0.05$). The burden of diabetes-related self-care maintenance and management behaviours were amplified in sleep deficit. **Conclusions:** Investigation of circadian rhythm and sleep patterns deserve a central place in regular diabetes care, being a modifiable target for optimal glycemic outcomes.

Keywords: type 1 diabetes, sleep pattern, circadian rhythm, cognitive function

COLORECTAL CANCER PREVENTION, DIAGNOSIS AND MONITORING

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Background: Colorectal cancer is the third most common type of cancer worldwide and the second most lethal, totaling 1.9 million new cases and 930,000 deaths annually. The highest incidence of colorectal cancer is found in Australia, the United States of America and Western Europe. **Material and methods:** For patients in moderate risk groups, the guidelines mention that screening should start around the age of 45. This screening can be performed with the help of a non-invasive FIT Test, which tests the level of hemoglobin in the stool. Compared to other stool bleeding tests (FOBT), the FIT test has a higher specificity and sensitivity. The FIT test also has the advantage of not requiring the cessation of iron replacement treatment or dietary restrictions. **Results:** Gold standard for detecting premalignant and malignant lesions in the colonic tract is lower digestive endoscopy. Studies in the field demonstrate that total colonoscopy is associated with a reduction in the incidence of colorectal cancer (through curative therapy of premalignant lesions) as well as with a decrease in mortality associated with colorectal cancer. **Conclusions:** Our study aims at the endoscopic follow-up of patients at high risk of developing colorectal cancer, establishing the incidence in the central region of Romania and establishing the correlation between non-invasive screening methods and the finding premalignant lesions while performing the lower G.I endoscopy.

Keywords: colorectal cancer, premalignant lesions, prevention, screening

THE RISK OF OBSTRUCTIVE SLEEP APNEA IN PATIENTS WITH TYPE 2 DIABETES AND NAFLD

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Background: The obstructive sleep apnea (OSA) is associated with both type 2 diabetes (T2D) and non-alcoholic fatty liver disease (NAFLD), but is under-investigated in practice. We aimed to evaluate the risk of OSA in T2D patients with NAFLD and identify markers for high risk. **Material and methods:** In this study 286 subjects with T2D were enrolled (271 with NAFLD and 16 age- and gender-matched controls). The risk of OSA was evaluated by the STOP-BANG questionnaire (used with permission). Blood pressure (BP), SpO2 and anthropometric measurements were obtained by standard methods, including bioelectrical impedance. Here we report preliminary data analysis. **Results:** The STOP-BANG score was higher in T2D patients with NAFLD (4.06 [0-7.0] vs 2.87 [2-5], p=0.0011). A higher proportion T2D-NAFLD subjects had an increased/moderate risk of OSA (47.97%/38.0% vs. 18.75%/37.5%, p=0.0035). The SpO2 was similar between the two groups, but the BP and heart rate values were higher in T2D-NAFLD patients with (134.9/82.1 vs 124.4/72.6 mmHg, p<0.01; 74.9±10.9 vs 65.9±6.6 b/min, p=0.0005). T2D patients with NAFLD also had higher % body fat (BF) (36.67±7.35% vs 28.78±7.44%, p=0.0003), waist circumference (WC) (111.65±11.6 vs 96.53±7.63 cm, p<0.0001), neck circumference (40.59±3.92 vs 38.36±3.75 cm, p=0.027), thoracic circumference (TC) (106.57±13.88 vs 99.44±6.99 cm, p=0.0012), pectoral skinfold (PSf) (15.95±3.55 vs 13.32±2.73 mm; p=0.0038) and subscapular skinfold (SsSf) (16.84±4.29 vs 11.08±3.92 mm, p<0.0001). The STOP-BANG score correlated positively with %BF (r=0.12 [0.005-0.24]; p=0.035), and SsSf (r=0.29 [0.18- 0.40]); PSf (r=0.25 [0.13- 0.36]), WC (r=0.61 [0.53-0.68]), TC (r=0.52 [0.43-0.60]), p<0.0001 for all. The BMI, WC and TC increased with higher risk of OSA. **Conclusions:** T2D patients with NAFLD have higher risk of OSA and several anthropometric indicators of higher upper-body adiposity associate with it. This work was supported by the University of Medicine, Pharmacy, Science and Technology "George Emil Palade" of Târgu Mureş Research Grant number 10126/5/17.12.2020.

Keywords: OSA, NAFLD, type 2 diabetes

DIAGNOSTIC AND THERAPEUTIC CHALLANGES IN DIABETES MELLITUS

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Background: Type 1 diabetes mellitus (T1DM) is an autoimmune disease that represent 5% of the total diabetes cases worldwide, that is characterized by the destruction of the insulin-producing beta cells of the pancreas. Latent autoimmune diabetes of adults (LADA) is a particular form of diabetes which has both immunological and metabolic features like type 1 and type 2 DM. **Material and methods:** In October 2023, a 23-year-old woman, who had been diagnosed with T1DM at the age of 17, was brought to the emergency room by her family because she was somnolent, with nausea, vomiting and diarrhea. She said that shewas working excessively for several months and during this time she experienced several hypoglycemic episodes and that shestopped insulin treatment for about one year. The laboratory investigations revealed severe acidosis (pH 6.657, HCO3 1.9mmol/L), hyperglycemia (613 mg/dL), high ketone bodies in the urine (150 mg/dL), leukocytosis (58000/mmc) with neutrophilia.Chest X-ray highlighted bilateral consolidation and minimal bilateral pleurisy. Given the severe ketoacidosis and dehydration, thepatient was admitted to the Intensive Care Unit where in addition to parenteral hydration, antibiotics and correction of the severeacidosis, treatment with intravenous continuous insulin infusion was started. After 3 days, the patient's condition improved beingable to be transferred to the Diabetology department. **Results:** During admission the patient was monitored being undersubcutaneous basal bolus insulin regimen. Based on the evolution of the disease and the clinical aspects, to clarify the diagnosisreferring to the type of diabetes there were determined as follows: glycosylated hemoglobin level (14%), anti-Glutamic AcidDecarboxylase antibodies (29.5 U/mL) and the C-Peptide (0.7 ng/mL). According to the results the LADA diagnosis wasconfirmed, which changes the therapeutical approach. **Conclusions:** LADA is often misdiagnosed due to a borderline symptomatology, being often confused at onset with T2DM and during its evolution with T1DM.

Keywords: LADA, Diabetes Melitus, Ketoacidosis

MICROBIOLOGY

VIBRIO ALGINOLYTICUS – A CHALLENGING LABORATORY DIAGNOSIS

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Background: The identification of common bacteria is generally facile, but for some non-conventional pathogens, the correct identification can be complex, and needs to be carried out on multiple levels. This study presents the identification of a rare bacterial pathogen, which was isolated repeatedly from auricular secretion, in the context of external otitis. **Material and methods:** Two different samples, two-weeks apart, were processed in the microbiology laboratory. The isolation of the predominant colonies was performed on common culture media (Columbia agar, CLED agar), with subsequent identification by Vitek2Compact, followed by antibiotic susceptibility testing by disk-diffusion method according to EUCAST standard V12.0. Given the rarity of this pathogen in human pathology, the classical identification was confirmed by MALDI-TOF MS and whole genome sequencing. The genomic comparison of the two strains was done using the NCBI Standard nucleotide BLAST software and CAB QUAST (Quality Assessment Tool for Genome Assemblies). **Results:** The first isolate was susceptible to all tested antibiotics, while the second one was resistant to ciprofloxacin. The Vitek2Compact identification showed a 99% confidence identification for *Vibrio alginolyticus*. On MALDI-TOF MS, the identification confirmed that both strains were *Vibrio alginolyticus*. The genomic sequencing of the two isolates showed 99.23%, respectively 98.60% similarity with ATCC17749 reference strain. The genome alignments of the two isolates showed a match of 99.8%. Furthermore, QUAST revealed a genome fraction of 92.84%. Multiple genes that may be related to pathogenesis were discovered using the NCBI BLAST, such as hemolysins (*hlyA*), cholera toxin transcriptional activator (toxR), genes responsible with biofilm production (*rpoN, relA, spot, Opp*), mobility genes (*luxS*), virulence proteins (*proA*, *vacB*) and Oxytetracycline Resistance Determinant (*tet34*). **Conclusions:** The classical methods of bacterial identification play a major role in day-by-day activity in the microbiology laboratory, but in selected cases, automated systems of identification and molecular biology are required for confirmation.

Keywords: bacteria, bacteria identification, genome sequencing, molecular biology, genes

EPIDEMIOLOGY OF ANTIBIOTIC-RESISTANT PSEUDOMONAS AERUGINOSA -INSIGHTS ON INFECTION AND COLONISATION

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Background: It is critical to comprehend the dinamics of the bacteria because the use of antibiotics is rising, and with it, bacterial resistance to antibiotics, making them hardly treatable. Pseudomonas aeruginosa is one of the most adaptable bacteria and represent a continuous threat to public health. **Material and methods:** The study followed the epidemiology of P. aeruginosa isolates from the Mures County Clinica Hospital (MCCH), during January 2022-October 2023. Identification of P. aeruginosa was based on positive oxidase test and growth on Cetrimid Agar (Oxoid, Basingstoke, UK). Kirby-Bauer disk diffusion and minimal inhibitory concentration method (MIC) were used according to procedures to evaluate the level of resistance, defining the isolates as MDR (resistance to 3 classes of antibiotics), XDR (resistance to all antibiotics, except one class), PDR (pan-drug-resistance). The colonisation/infection status was apreciated by the epidemiology department. **Results:** Out of a total of 1767 resistant strains reported, 347 were identifyed as P. aeruginosa (19.63%). Among these, 119 (34.29%) were MDR, 228 (65.70%) XDR, and none PDR. The main pathological product associated with P. aeruginosa was pus (n=250; 72.04%), followed by urine (n=52; 14.98%) and lower respiratory tract secretions (n=24; 6.91%). Only 12 strains (3.45%) were considered to be related with infections, 161 (46.39%) were considered colonisers, while the rest could not be appreciated. Dermatology (n=185; 53.31%), intensive care unit (n=48; 13.83%) and infectious diseases (n=34; 9.79%) were the main sources of P. aeruginosa. **Conclusions:** The results highlights the critical need for efficient antimicrobial stewardship and infection control measures by highlighting the startling frequency of drug-resistant P. aeruginosa strains within the MCCH. Clinicians and public health officials can make use of the resistance profiles from the microbiology laboratory and of the epidemiological determinants, to formulate specific measures to counter the growing threat posed by multidrug-resistant bacteria.

Keywords: colonisation, infection, Pseudomonas aeruginosa, Pan-Resistance, Multi-Drug Resistance

ENGINEERING BACTERIAL STRAINS WITH FLUORESCENT PROTEINS: A MOLECULAR INSIGHT INTO CELLULAR PROCESSES

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Background: Fluorescent proteins have revolutionized the field of biology and scientific research, providing researchers the ability to track and visualize cellular and molecular processes in real time. A protein known as cyan fluorescent protein (CFP) is a valuable tool in molecular biology, genetics, and cell biology. Leveraging the properties of bacteria and fluorescent proteins, the study aimed to create an Escherichia coli strain encoding plasmidic CFP gene, to be used in subsequent research. **Material and methods:** The bacterial host (Escherichia coli DH10B), the pUC19 plasmid, and the gene encoding the CFP fluorescent protein gene. The plasmid containing the gene encoding the CFP protein (named pUC19-CFP) was created by ligating the vector (pUC19 plasmid) with the insert fragment (the CFP gene derived from a well-characterized viral plasmid of Adeno-Associated-Virus type-2). The pUC19-CFP plasmid was introduced into the highly competent Escherichia coli DH10B strain via heat shock. The transformed bacteria were grown on Luria-Bertani agar containing ampicillin, and the multiplied plasmids were extracted and purified byspecific kits. The validation of the proper insertion of the CFP fragment was performed by PCR for CFP and by endonucleaserestriction of the newly created plasmid. Both E. coli and pUC19-CFP were stocked for further use. **Results:** Bacteria thatsuccessfully acquired the pUC19-CFP plasmid gained both ampicillin resistance (expression of the AmpR gene on the plasmid) andthe ability to produce the CFP protein (expression of the inserted CFP gene), as seen in fluorescence microscopy. The PCR forCFP gene showed positive result; the endonuclease treatment produced restriction fragments with expected sizes (pUC19-CFP wascut both in the CFP and in the intergenic regions). **Conclusions:** Our methodology highlights the versatility and applicability ofthis approach for further investigations in bacteriology, molecular biology, genetics, and cell biology. The successful creation andexpression of the pUC19-CFP plasmid underscore the potential for advancing research capabilities by using fluorescent proteins inbacterial systems.

Keywords: Fluorescent protein, pUC19, Escherichia coli DH10B, transformation

PASSING TIME IN ICU – A DANGER FOR BIOFILM EVOLUTION?

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Background: The ability to form biofilms is an important virulence factor, especially on indwelling medical devices. As patients admitted to ICUs are usually intubated, the study aims to assess the biofilm formation ability of bacterial strains isolated from tracheal aspirates. **Material and methods:** Thirty-one multidrug-resistant bacterial strains isolated from tracheal aspirate samples in the Microbiology Laboratory of Mures Clinical County Hospital were included in the study. After subculturing, 0.5 McFarland inoculi were created in NaCl 0.9%. The biofilm formation ability was studied by mixing 10 ul from each inoculum, 170 ul RPMI, and 20 ul Fetal Bovine Serum on microtiter plates. The plates were incubated for 24 and 48 hours at 37°C. After incubation, the newly developed were stained with crystal violet 0.5%, decolorized with acetic acid 30%, and read spectrophotometrically at a wavelength of 550 nm. The experiments were conducted in triplicate. The data were analyzed in spreadsheet software and GraphPad. **Results:** Among the 31 isolates, 45.16% were Acinetobacter baumannii (AB), 41.93% were Klebsiella pneumoniae (KP), and 12.91% were Pseudomonas aeruginosa (PA). The strongest biofilm producers were AB, followed by PA and KP (0.979, 0.503, and 0.148 mean OD) at 24 hours, respectively PA, AB, and KP (1.656, 1.383, and 0.492 mean OD) at 48 hours. For all strains, the biofilm was enhanced at 48 hours ($p < 0.05$ for KP and AB). **Conclusions:** All tested clinical isolates displayed a biofilm formation ability, the time passage positively affects its evolution, especially for non-fermentative Gram-negative rods. More research is needed to better understand the biofilm formation, especially in vivo.

Keywords: Biofilm, gram negative rods, MDR strains

FUSARIUM KERATITIS IN A PATIENT WITHOUT COMORBIDITIES – A RARE CASE REPORT

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Background: *Fusarium* is a large genus which comprises more than 300 species, part of the group of hyaline filamentous fungi. In immune-competent individuals, *Fusarium* spp. causes superficial infections such as keratitis and onychomycosis, while in immunosupressed people it can cause invasive forms of disease. **Material and methods:** We present the case of a 70 year-old male patient with no past medical history who was admitted to the Ophtalmology clinic acusing pain, loss of visual acuity, photophobia and redness of his left eye that debuted approximately one week before. For diagnosis, along with other paraclinical examinations, corneal scrapings were sampled and sent to the Microbiology Laboratory for bacterial and fungal identification. **Results:** The samples were inoculated on the common culture media and after approximately five days of incubation, white, fluffy colonies with a cottony surface and yellow-brown reverse started growing. The colonies were isolated on Sabouraud dextrose agar for further testing. Macroscopical examinations of the culture along with the microscopical examinations using lactophenol cotton-blue showed characteristic aspects for *Fusarium* spp. Molecular tests were further used for identification to the level of species. The patient received antifungal treatment (subconjunctival injections with Voriconazole), associated with Atropine and Dexamethasone. The evolution was favorable, with symptom remission in approximately one week. However, the patient never recovered his eyesight. **Conclusions:** *Fusarium* spp. is rarely involved in fungal keratitis. Cultivating the pathogen and microscopical examinations can be helpful for diagnosis and can aid the patient in receiving appropriate treatment, as demonstrated by the present case. Molecular diagnostic may be helpful, especially in the not very common cases.

Keywords: Fusarium, fungal keratitis, case presentation

NEONATOLOGY

THE ROLE OF INTERLEUKIN-6 AND INTERLEUKIN-8 IN THE DIAGNOSIS OF EARLY-ONSET NEONATAL SEPSIS

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Background: Previous literature data sustained that particular cytokines, including interleukin-6 and interleukin-8, increase in early-onset neonatal sepsis. Therefore, this review aims to assess if these individual interleukins or their combined use may predict early-onset neonatal sepsis. These cytokines can be easily depicted from blood samples taken from the umbilical cord of the neonates born from pregnancies with maternal-fetal infectious risk. **Material and methods:** Two major databases-Pubmed and Web of Science- were searched using the words "interleukins and early onset neonatal sepsis" for articles that analyzed the role of interleukin-6 and interleukin-8 in the diagnosis of early-onset neonatal sepsis. **Results:** Some studies report that cord blood interleukin-6 and interleukin-8 are superior to other traditional markers of neonatal sepsis. Other studies suggest that the determination of interleukin-6 and interleukin-8 in combination with clinical signs of neonatal sepsis are better predictors of early-onset neonatal sepsis. However, results are controversial. Most of the studies state that there is no benefit in serial determination of interleukin-6 and interleukin-8 in the diagnosis of early-onset neonatal sepsis. **Conclusions:** Interleukin-6 and interleukin-8 have the potential to improve our management of neonates at risk for early-onset neonatal sepsis and they can easily be measured from the umbilical cord. The combination of markers is better than individual markers to diagnose early-onset neonatal sepsis. Precocious diagnosis of early-onset neonatal sepsis will decrease the overuse of antibiotics and can also improve clinical outcomes. The combination of the two markers may help us in making decisions regarding antibiotics treatment and in upgrading the level of medical care by increasing early-onset neonatal sepsis diagnostic accuracy. However, further studies on larger cohorts are needed.

Keywords: neonate, interleukin-6, interleukin-8, early-onset neonatal sepsis

NEUROLOGY

REHABILITATION WITH A COMBINED APPROACH IN THE CASE OF OBSTETRICAL BRACHIAL PLEXUS INJURY – A CASE STUDY

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Background: Brachial plexus paralysis represents a neurologic condition of significant severity, with impaired functionality of the upper limb. This condition can occur as a result of a difficult birth, incorrect obstetrical maneuvers, or accidents. The nerves that make up the brachial plexus can be stretched or damaged, compressed, leading to a motor deficit in the upper limb of a paretic nature, resulting in a reduction or loss of movement in the affected limb. Objectives: This case study involves a combined therapeutic intervention, followed by monitoring the progress over a period of one year, in an infant with superior Erb Duchenne type brachial plexus paralysis. **Material and methods:** The patient is a one-month-old infant who suffered severe perinatal hypoxic distress. Following an obstetrical accident, the infant was diagnosed with superior brachial plexus palsy, a diagnosis established by a neurologist who assessed the infant within the first 10 days after birth and referred them for rehabilitation in the physiotherapy clinic. The therapeutic plan involved combining two specific therapy methods, Bobath and Vojta, with a duration of 30 minutes/3 times a week. Additionally, parents were instructed to follow a set of repositioning and toning techniques at home on a daily basis. To assess the motor deficiency status, evaluations were periodically conducted by both the neurologist and the therapist. **Results:** Initially presenting with a severe motor functional deficit, after three months of therapy, the infant was able to use the affected limb, support themselves in a ventral position. After an additional two months, rehabilitation was nearly complete. Furthermore, the Vojta technique contributed to the recovery of the initial overall motor deficit. Gradual regaining of range of motion and muscle tone contributed to age-appropriate motor development. **Conclusions:** Early rehabilitation through the combination of these two therapies is effective in cases of brachial plexus palsy, with an important factor being the age at which therapy is initiated.

Keywords: brachial plexus, rehabilitation, therapy, Vojta, Bobath

ELECTROENCEPHALOGRAPHIC BIOMARKERS OF EPILEPSY DEVELOPMENT IN PATIENTS WITH ACUTE SYMPTOMATIC SEIZURES

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Background: Acute symptomatic seizures represent the type of epileptic seizures that occur as a result of a systemic injury or inclose temporal association with acute disorders of the central nervous system (metabolic, toxic, infectious, structural orinflammatory). The incidence of acute symptomatic seizures is 29-39/100,000/year and represent 40% of all epileptic seizuresoccurring in persons with acute brain injury and approximately 34% of all afebrile seizures in the population. **Material and methods:** To evaluate the main aspects of acute symptomatic seizures and to appreciate the importance of EEG in predictingepileptogenesis and seizure recurrence of patients with acute symptomatic seizures. **Results:** Most studies have shown thatcerebrovascular disease, traumatic brain injury, withdrawal and CNS infections are the most common etiologies of acutesymptomatic seizures. Compared with unprovoked seizures, acute symptomatic seizures have a lower frequency and recurrence, buta 9-fold higher mortality rate in the first 30 days. Although electroencephalography is an important tool in detecting pathologicalgraphoelements in these patients, studies are aimed at establishing EEG biomarkers of epilepsy development. Electrographicseizures, periodic discharges and slowing without delta waves are some of the EEG patterns at high risk of developing epilepsy. **Conclusions:** Acute symptomatic seizures are neurological emergencies with increased mortality and morbidity. Differentiatingacute symptomatic seizures from unprovoked epileptic seizures is a key element in the management and evolution of these patients.The risk of developing epilepsy in patients with acute symptomatic seizures is approximately 30% and it is very important to findEEG biomarkers that predict this development.

Keywords: Acute symptomatic seizures, Epilepsy, Electroencephalography, EEG patterns

IMPROVING HEALTH STATUS BY REDUCING THE EMOTIONAL DISTRESS IN PATIENTS WITH MULTIPLE SCLEROSIS

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Background: Among neurological conditions, multiple sclerosis is considered the main factor that causes chronic neurological disability in young adults. The degenerative and unpredictible nature of the disease, impaired mobility, along with adverse effects of disease modifying therapy are correlated with the increase of the emotional distress impacting the quality of life even more. The aim of the present study was to explore the improvements of health status in multiple sclerosis by reducing the intensity of depression, anxiety and dysfunctional cognitive processes following a brief cognitive-behavioral intervention. **Material and methods:** After the screening, 31 patients diagnosed with multiple sclerosis, were selected and consented to follow a brief cognitive-behavioral intervention. Assessments were completed at baseline, two weeks, and two months afther the intervention, using Beck Depression Inventory-II, Hamilton Anxiety Rating Scale, Automatic Thoughts Questionary and EQ-5D-3L. **Results:** The results revealed a statistically significant reduction of depression ($p < .001$), anxiety ($p < .001$), negative automatic thoughts ($p < .05$), as well as the impovement of overall health status ($p<.001$) after the intervention. All these benefits maintained at the two-month follow-up. **Conclusions:** A brief cognitive-behavioral intervention decreased psychopatological symptoms, impoving general functioning in multiple sclerosis. Moreover, this approach significantly diminished negative cognitive processes contributing to the onset and maintainance of emotional distress. Based on these findings we conclude that a tailored psychotherapeutic protocol can successfully augment the standard medical care off patients with multiple sclerosis.

Keywords: cognitive-behavioral intervention, emotional distress, negative automatic thoughts, multiple sclerosis, health status

NUTRITION AND DIETETICS

ENHANCING DIETITIANS' PRACTICES THROUGH DIGITALIZATION AND ARTIFICIAL INTELLIGENCE

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Background: The role of Dietitians in Romanian healthcare is becoming increasingly essential. The activities undertaken by Dietitians encompass a wide spectrum, ranging from designing personalized nutrition plans to addressing complex dietary challenges. The profession gained significant traction over the last years, with over 500 authorized specialists by 2023. Digital tools integration might play an important role in this evolving landscape. **Material and methods:** The aim of this study was to analyze the current activities and challenges faced by Dietitians in Romania and explore how digitalization can facilitate and improve their practice. Online validated questionnaires were used for this investigation. The study collected responses from registered Dietitians throughout different regions of Romania over the period spanning 2022 to 2023. **Results:** A total of 88 questionnaires were completed. The primary challenges faced in Dietitians' practice were patient adherence to nutritional treatment plans (55.8%) and limited access to precise and updated nutritional information (42.3%). A significant part of Dietitians (62.5%) frequently used online platforms in their work, with patient anamnesis forms (95.8%) and meal plan generation tools (87.5%) being considered helpful features. The utilization of online platforms led to several benefits, such as ease of calculating nutritional needs (91.7%) and reduced time required to create meal plans (83.3%). Furthermore, 77.8% of the respondents were willing to use Artificial Intelligence (AI) tools in their practice if more corresponding studies would demonstrate its positive impact. **Conclusions:** The analysis of data from Romanian Dietitians revealed a growing reliance on digital tools in their activities. This shift towards digitalization together with AI embracement offers numerous advantages, including better efficiency in meal planning and the ability to address complex nutritional requirements. Additionally, our findings underscore the need for improved access to up-to-date and precise nutritional information to meet the challenges faced by this new medical profession recently established in Romania.

Keywords: dietitians, nutrition, digitalization, artificial intelligence

OBSTETRICS AND GYNECOLOGY

DOES INFLAMMATION HAVE A ROLE IN OBESE PATIENTS WITH GESTATIONAL DIABETES MELLITUS?

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Background: Gestational diabetes is the most common metabolic complication of pregnancy. Obesity and inflammation are known risk factors for the development of gestational diabetes. The study aims to investigate the association between inflammation, obesity, and gestational diabetes mellitus (GDM). **Material and methods:** We performed a prospective study from 01.01.2022 to 30.06.2023 in the Obstetrics and Gynecology Clinic of the Mureș County Clinical Hospital. 120 patients were studied, and based on the glucose tolerance test result were divided into 80 control patients and 40 patients with gestational diabetes, groups that were later divided into non-obese patients (body mass index-BMI <30 kg/ m2) and obese patients (BMI³30.0 kg/m2).To evaluate inflammatory status, serum C reactive protein (CRP), leukocytes, neutrophil-to-lymphocyte ratio (NLR), and platelet-to-lymphocyte ratio (PLR) were prospectively evaluated at 24-28 weeks of pregnancy (time of oral glucose tolerance test-OGTT) and birth. **Results:** There were no statistically significant differences found in the inflammatory markers studied between patients with GDM who were non-obese and those who were obese, as well as between obese control and obese patients with GDM, during the time of OGTT and at birth. Additionally, there were no differences observed between non-obese and obese control patients at birth. During our study, we observed a significant difference in the levels of CRP (p=0.02) and NLR (p=0.03) between non-obese and obese control patients at the time of OGTT. We also noticed a significant increase in the levels of inflammatory markers among non-obese control patients throughout their pregnancy. In non-obese patients with GDM, we found that the PLR decreased significantly throughout pregnancy, from the time of OGTT to delivery. Limitations of the study are given by the small and disproportionate groups. **Conclusions:** The study did not find evidence linking inflammation, obesity and GDM.

Keywords: inflammation, obesity, gestational Diabetes Mellitus, Creactive protein

ONCOLOGY

INFLAMMATION AND CANCER CACHEXIA – WHAT DO WE NEED TO KNOW?

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Background: Cancer, a leading cause of death worldwide, was associated with 10 million deaths in 2020. Up to 80% of cancer patients experience cancer cachexia (CC), the main cause of death in up to 30% of cancer patients. Cancer cachexia, a complicated metabolic condition, is linked to systemic inflammation, promoting tumor growth, proliferation, and dissemination. **Material and methods:** There is a direct relationship between cancer cachexia, metabolic imbalances, and pro-inflammatory cytokines. The European Society for Medical Oncology (ESMO) and the European Society for Clinical Nutrition and Metabolism (ESPEN) emphasize the role of inflammation in the proper assessment of cachectic patients. Among the most validated tools used in inflammatory status assessment, we cite the modified Glasgow Prognostic Score (mGPS), Prognostic Nutritional Index (PNI), neutrophil/lymphocyte ratio (NLR), neutrophil count, C-reactive Protein (CRP), fibrinogen, albumin and pro-inflammatory cytokines levels (TNF, IL-6, and IL-1). Proteins like zinc-2 -glycoprotein (ZAG), activin A, myostatin, and growth-derived factor-15 (GDF-15), and metabolites like lipoproteins, sphingolipids, amino acids, and micro-RNAs are related to lipolysis, muscle atrophy, and anorexia, further promoting cancer cachexia. **Results:** Studies showed that high levels of pro-inflammatory cytokines were inversely associated with body composition parameters like skeletal muscle index (SMI) and skeletal muscle area (SMA). High NLR was associated with cachexia, weight loss, and poor overall prognosis. Increased levels of CRP, fibrinogen, and leucocytes were linked to poor prognosis and an increased need for nutritional intervention. Low levels of albumin, high levels of TNF- and IL-6 were also linked to inflammation, skeletal muscle mass loss, and increased muscle catabolism. **Conclusions:** Inflammation is associated with muscle and weight loss, altered cellular metabolism, poor quality of life, and high mortality in cancer patients. There is an increased need to identify specific biomarkers for early detection and adequate management of cachectic patients, with the final goal of increasing life expectancy and overall quality of life.

Keywords: cancer, cachexia, inflammation, biomarkers, cytokines

PATHOLOGY

LYMPHOEPITHELIOMA-LIKE UROTHELIAL CARCINOMA – A CASE REPORT

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Background: Lymphoepithelioma-like urothelial carcinoma is a rare entity, accounting for 0.3% - 1.3% of all bladder carcinomas, with pathological features similar to the nasopharyngeal lymphoepithelioma. **Material and methods:** We present the case of a 76-years-old male patient who presented to the Urology Department for haematuria. A transurethral resection of bladder was performed and approximately 30 fragments, weighing approximately 3 grams were sent to the Pathology Department. **Results:** Microscopically, a solid tumoral proliferation infiltrative in the bladder wall was observed, composed of sheets and clusters of tumour cells, associated with a dense chronic inflammatory infiltrate, predominantly lymphocytic. Tumour cells presented poorly defined cytoplasmic borders, abundant eosinophilic cytoplasm and large pleomorphic nuclei with prominent central nucleoli. Immunohistochemically, they expressed Cytokeratin AE1/AE3 and GATA3. The inflammatory cells were positive for CD3 (Lymphocytes T) and CD20 (Lymphocytes B). The tumour was invasive in the lamina propria and in the detrusor muscle and was staged as pT2. The morphological aspects and immunohistochemical profile led to a diagnosis of lymphoepithelioma-like urothelial carcinoma. **Conclusions:** LELC is a rare variant of infiltrative urothelial carcinoma, which must be differentiated from high-grade lymphomas. It is important to be recognised, as this variant of UC is demonstrated to be positive for PD-L1, and thus may benefit from immune checkpoint inhibitors as a therapeutic option.

Keywords: lymphoepithelioma-like carcinoma, urothelial carcinoma, immunohistochemistry, cytokeratin AE1/AE3, GATA3

UNUSUAL METASTASIS OF BLADDER UROTHELIAL CARCINOMA TO THE OVARY

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Background: Urothelial carcinoma (UC) is the most frequent type of bladder cancer, accounting for more than 90% of all bladder cancers. It has a potential for recurrence, progression and distant metastasis. Lymph nodes, bone, lung, liver, peritoneum, and adrenal glands are the most common reported sites of metastasis, while metastatic UC to the ovary is extremely rare (2.5-3.8% of cases). **Material and methods:** A 64-year-old female patient who underwent transurethral resection of the bladder nine months ago was admitted to the Gynecology Department for a left ovarian mass. Total hysterectomy with bilateral salpingo-oophorectomy was performed and the specimen was sent to the Pathology Department. **Results:** Gross examination of the left ovary revealed multiple white nodules in the ovarian stroma. Microscopically, these nodules were composed of clusters and sheets of tumor cells, that became discohesive, associated with extensive necrosis and hemorrhage. The cells had eosinophilic cytoplasm, with eccentrically located high grade nuclei and intracytoplasmatic vacuoles. This morphological aspect was no specific for a primary ovarian tumor. Considering the history of the patient (UC with a plasmocytoid component nine months ago, with the same morphology), and the nonspecific aspect for a primary ovarian tumor, immunohistochemistry was performed. Tumor cells were positive for GATA3, Cytokeratin 7 and p63 and negative for Estrogen, Progesteron, WT1 and E-cadherin, proving the urothelial origin. All these corroborated data (morphology, immunohistochemical profile and history of urothelial carcinoma) confirmed the diagnostic of metastatic UC into the left ovary. **Conclusions:** This particular rare case of UC metastasis in an unusual site, such as the ovary, revealed the importance of clinical information and of immunohistochemistry in establishing an accurate diagnosis.

Keywords: metastasis, ovary, urothelial carcinoma

V-SET AND IMMUNOGLOBULIN DOMAIN CONTAINING 1 (VSIG1) IMPLICATIONS IN EPITHELIAL-MESENCHYMAL TRANSITION (EMT) IN GASTRIC CANCER

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Background: VSIG1 is a recently described protein, whose role is yet incompletely understood, including in gastric cancer. The aim of this paper was to emphasize the possible implications of this protein in epithelial-mesenchymal transition (EMT) of gastric cancer. **Material and methods:** This study was conducted on a cohort of 90 patients diagnosed with gastric cancer. For each tumor, VSIG1 immunohistochemical expression was assessed and correlated with EMT status, established by E-cadherin and beta-catenin expression. VSIG1 expression was analysed depending on variation of subcellular localisation between tumor center and front of invasion: homologous cases showed the same type of expression in both locations and heterologous cases exhibited VSIG1 translocation in invasive front, compared to tumor core. **Results:** From all 90 cases, only 20 exhibited VSIG1 translocation, the rest of them showing the same pattern in both tumor locations. From these 20 cases, 5 presented nuclear translocation in invasive front, while in tumor core VSIG1 was expressed on membrane. The rest of 15 cases showed VSIG1 loss in invasive front, with cytoplasmic expression in tumor core. The 70 homologous cases showed either membrane-membrane VSIG1 pattern (n=20), or null expression in both locations (n=50). Regarding EMT, an epithelial phenotype was dominant in homologous cases (E-cadherin and beta-catenin expressed on membrane), while cases with heterologous VSIG1 expression, respectively cytoplasmic expression in either tumor core or invasive front, exhibited a complete EMT, respectively a mesenchymal phenotype (E-cadherin loss and beta-catenin nuclear translocation). **Conclusions:** Even though these results must be confirmed on larger cohorts, VSIG1, a newly described protein, might act as a modulator of EMT in gastric cancer, similarly to E-cadherin-beta catenin axis.

Keywords: V-set and immunoglobulin domain containing 1 (VSIG, gastric cancer, epithelial-mesenchymal transition (EMT)

GIANT LIPOMA LIKE-ANGIOMYOLIPOMA OF THE KIDNEY: A DIAGNOSTIC CHALLENGE

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Background: Renal angiomyolipoma (AML) is a rare benign mesenchymal tumor with triphasic morphology: variable amount of fat, smooth muscle cells and thick-walled blood vessels. When the lipomatous component is predominant, it can be confused with a lipoma or a well-differentiated liposarcomas (WDLs). **Material and methods:** We present the case of a 47 years-old manpresenting to the emergency room with right lower back pain. No hematuria or dysuria were noticed. The computing tomographyof the abdomen revealed a coraliform calculus in the pelvis with marked edematous infiltration of the calyceal and pelvic structures.The patient underwent symptomatic treatment, with partial improvement of the symptoms, but the symptoms becoming refractoryand after one year an MRI was performed which revealed the presence of a heterogeneous lipoma-like mass of the right renal sinuswhich includes the pyelo-calyceal system and the proximal ureter. The patient underwent right nephrectomy with adrenalectomyand the specimen was sent to the pathology department. **Results:** The gross examination of the surgical sample revealed a largewell-demarcated and pseudo-encapsulated tumor measuring 200x115 mm with yellowish surface, that compresses the renalparenchyma, which measured 15 mm in width. The tumor showed no signs of necrosis or haemorrhage. Microscopically, thetumour consisted predominantly of mature adipocytes, some of them multivacuolated, HMB45-positive; in some restricted areasthe adipocytes were associated with very few smooth muscle cells expressing SMA and rare thickened blood vessels. Based onmicroscopic and immunohistochemical profile the tumor was diagnosed AML-lipoma like. **Conclusions:** Although AML it is themost common benign renal tumour, lipoma like subtype might be of difficult diagnosis due to the extremely small proportion, asin the present case, of muscle and vascular component.

Keywords: lipoma-like, AML, kidney

METASTATIC MELANOMA - STATISTICS FROM THE PATHOLOGY DEPARTMENT

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Background: Although cutaneous melanoma accounts for only a few percent of all diagnosed skin cancer cases, it is the main cause of skin cancer-related mortality. The understanding of the molecular, biochemical, and immunological features of melanoma has evolved substantially over the last 20 years, but metastatic melanoma remains the primary barrier to successful therapy. **Material and methods:** We present a statistic from the Pathology Department regarding all the melanoma metastasis diagnosed histopathologically between 2021-2023. Melanoma metastasis was found in the skin, distant nodes, lungs, liver, and gastrointestinal tract — especially the liver and the small intestine. All the metastasis were documented by microscopic examination on hematoxylin-eosin stain and immunohistochemistry using SOX-10. **Results:** We had 158 cases of primary melanoma diagnosed between 2021 and October 2023 and 14 cases with melanoma recurrence. 55 patients with sentinel lymph nodes were sent, from which 48 (87.2%) were positive for metastasis. At the moment of diagnosis, 7.5% of the patients already had in-transit metastasis. 16 patients presented with distant metastasis in the gastrointestinal tract, especially in the liver (50%), and 4 cases with lung metastasis diagnosed on pulmonary biopsy. **Conclusions:** The main cause of death in melanoma patients is widespread metastases. Melanoma staging is based on the primary tumor thickness, ulceration, lymph node, and distant metastases. Targeted metastatic melanoma therapies are generally unsuccessful, and new therapies are still under development.

Keywords: melanoma;, metastasis;, gastrointestinal tract.

HISTOLOGICAL AND IMMUNOLOGICAL MARKERS OF UNSTABLE CAROTID ATHEROSCLEROTIC PLAQUES

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Background: Atherosclerosis is a disease caused by the chronic inflammation of the arterial wall which will lead to the development of the atherosclerotic plaque. Location of plaque at the carotid artery can lead to stroke or transient ischemic attack by its rupture due to morphological changes specific for unstable plaques. **Material and methods:** This is a prospective study which included 119 patients with severe carotid artery stenosis caused by atherosclerotic plaque. These patients underwent carotid endarterectomy, and the surgery specimens were studied by following the histological modifications of the carotid plaques like calcification, the presence of the inflammatory infiltrate, ulceration, thrombosis, intraplaque hemorrhage which are direct signs of vulnerability. 67 cases with massive perilesional inflammatory infiltrate were chosen for further immunohistochemical examination. We searched for CD68+ infiltrate, iNOS2+, Arg1+, and CD31 expressions and these were quantified by digital morphometry. **Results:** Specimens with an inflammatory infiltrate (63%) were associated with the presence of microcalcification (56%) and the expression of superficial calcification (64%). Inflammation and microcalcification were significantly associated with plaque ulceration ($p<0.008$). Furthermore, the incidence of hemorrhagic rupture was higher in plaques with superficial calcification than in those with deep calcification ($p=0.031$). Furthermore, the extended/confluent pattern was significantly associated with the absence of hemorrhage ($p = 0.019$). Intraplaque hemorrhage ($p=0.003$) was associated with a greater macrophage CD68+ infiltrate. In cases with dominant iNOS2+ the occurrence of atherothrombosis was significantly more frequent ($p=0.046$) than in those with Arg1+. Plaque neovascularization, characterized by CD31+, was correlated with the presence of atherothrombosis ($p=0.02$). **Conclusions:** Our findings provide histological evidence for the critical role of microcalcification and inflammatory cell invasion in advanced carotid plaque destabilization. The intensity of macrophage infiltration is associated with intraplaque hemorrhage, and the presence of inflammatory iNOS2+ macrophages is correlated with atherothrombosis in advanced carotid plaques.

Keywords: carotid atherosclerosis, unstable plaques, inflammatory infiltrate, microcalcification, intraplaque hemorrhage

PEDIATRICS

THE COMPARISON OF MYOCARDIAL FUNCTION BETWEEN PREMATURE NEWBORNS AND TERM NEONATES USING 2D SPECKLE TRACKING ECHOCARDIOGRAPHY

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Background: Assessment of myocardial function through speckle tracking echocardiography (STE) can bring benefits to conventional echocardiography. Premature newborns represent a group of particularly vulnerable neonates as they undergo several hemodynamic challenges in the postnatal period. Our objective is to compare STE peak global longitudinal (pGLS) and regional strain values in premature neonates and control groups. **Material and methods:** This is a two years prospective study, in which 64 term and 21 premature newborns (gestational ages 28-36 weeks) were enrolled. They underwent cardiac ultrasound and the evaluation protocol involved two-dimensional image acquisitions from the apical four-chamber view of both ventricles. Afterwards, the images were analyzed offline, by using the autostrain function. **Results:** Segmental strain analysis showed no significant difference between the two groups regarding the interventricular septum. However, left and right ventricular segmental strain measurements differed significantly ($p<0.01$). pGLS and ejection fraction were similar between groups. Premature newborns presented higher mean values of right ventricular free wall longitudinal strain, (-24.19±4.95 versus -18.05±5.88) and of right ventricular global four chamber longitudinal strain, (-19.71±3.62 versus -15.46±5.59, $p<0.01$), when compared to term neonates. **Conclusions:** Echocardiographic assessment of myocardial deformation is feasible in preterm infants and may bring complementary data to conventional parameters.This research was supported by University of Medicine, Pharmacy, Science and Technology "George Emil Palade" of TârguMureş Research Grant number 10126/4/17.12.2020.

Keywords: preterm newborn, myocardial function, speckle-tracking ecocardiography, pediatric cardiology

PHARMACY

CONTRIBUTIONS TO THE PLANT-MEDIATED SYNTHESIS: UNRAVELING THE BIOSYNTHESIS AND BIOLOGICAL POTENTIALS OF SOME METALLIC NANOPARTICLES

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Background: Oak (Quercus sp.) bark is used in traditional medicine and phytotherapy for various purposes due to its rich chemical composition. The aim of this study was to synthesize gold nanoparticles (AuNPs), silver nanoparticles (AgNPs), platinum nanoparticles (PtNPs), and palladium nanoparticles (PdNPs) using aqueous extracts of Quercus dalechampii, Q. frainetto, and Q. petraea. **Material and methods:** Five factors were examined during nanoparticle formation, including reaction time, metal ion concentration, pH, extract-to-metal ion ratio, and temperature. UV-Vis was used for optimization, and TEM was employed for characterization. Antimicrobial and antifungal properties were tested on bacterial and fungal strains, and cytotoxicity was assessed on HaCaT cells via the Neutral Red method. **Results:** The TEM analysis revealed that the nanoparticles (NPs) had sizes ranging from 3.41 to 46.3 nm, with a predominance of spherical shapes. AuNPs and AgNPs displayed remarkable antibacterial activity against various tested bacteria, including MRSA, S. aureus, and E. coli. In contrast, PtNPs and PdNPs exhibited limited antibacterial efficacy. Furthermore, AuNPs from all three oak extracts demonstrated significant antifungal activity against Candida albicans ATCC 10213 and C. krusei ATCC 6258, while C. auris ATCC 10913 showed higher resistance. AgNPs exhibited substantial antifungal activity against C. albicans ATCC 10213 and C. krusei ATCC 6258 but lacked effectiveness against C. auris ATCC 10913. PtNPs and PdNPs demonstrated limited antifungal potential against these Candida strains. Additionally, cytotoxicity tests at various concentrations highlighted a direct correlation between concentration and cytotoxicity. Increasing concentrations resulted in a corresponding rise in cytotoxic activity in these nanoparticle solutions. **Conclusions:** The synthesis of nanoparticles mediated by using Quercus extracts demonstrates their potential for developing effective treatments against bacterial and fungal infections, with promising applications in medicine and therapy.

Keywords: nanoparticles, Quercus, antimicrobial, antifungal, cytotoxicity

REAL-TIME PARTICLE SIZE ANALYSIS DURING GRANULE FLUIDIZATION WITH AN ARTIFICIAL INTELLIGENCE-BASED IMAGING SYSTEM

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Background: The particle size is a critical quality attribute (CQA) in pharmaceutical processes, which influences the segregation, compressibility and flow characteristics of powders and granules, as well as the properties of the final product, such as dissolution profile and bioavailability. In the presented work, we examined the applicability of a convolutional neural network-based image analysis system to monitor the particle size of fluidized granules in real-time. **Material and methods:** The key components of the direct imaging system are a rigid fiber-optic endoscope, a light source and a high-speed camera, which allow for real-time monitoring of the particles. For image processing, we employed instance segmentation using convolutional neural networks (CNNs). This allows for the determination of particle size and shape characteristics (circularity, elongation). The suitability of the method was evaluated by determining the particle size distribution (PSD) of various granule mixtures within the 100–2000 µm size range. **Results:** The convolutional neural network-based model proved capable of recognizing the particles in focus despite the dense material flow. The volume-based size distribution was compared to offline reference measurements (laser diffraction, off-line image analysis), and all three methods showed similar trends. **Conclusions:** The developed imaging system seems promising; the results of this initial study demonstrate a good relationship between in-line and off-line measurements. The CNN-based system is highly feasible as a process analytical technology (PAT) tool for monitoring particle size during fluid-bed granulation. The research was supported by the Agency for Credits and Study Grants coordinated by the Romanian Ministry of National Education. Financial support was provided by the Ministry of Culture and Innovation of Hungary from the National Research, Development and Innovation Fund, financed under DKÖP program. Further support was received from the ÚNKP-23-3-I-BME-102 New National Excellence Program of the Ministry for Culture and Innovation from the source of the National, Research, Development and Innovation Fund.

Keywords: machine vision, convolutional neural network, endoscopy, particle size analysis, fluid-bed granulation

EXPLORING THE EFFECTIVENESS OF ORGANIC ACIDS IN CHEMICAL PEELS FORACNE TREATMENT

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Background: Acne vulgaris is a prevalent dermatological condition that significantly impacts the quality of life for individuals worldwide. Chemical peels, particularly those utilizing organic acids, have gained substantial attention as effective treatments for acne. This study aims to comprehensively explore the effectiveness of various organic acids used in chemical peels for acne treatment. **Material and methods:** The study focuses on the use of organic acids such as aliphatic carboxylic acids (azelaic acid, trichloroacetic acid), aliphatic hydroxycarboxylic acids (glycolic acid, lactic acid, pyruvic acid) and aromatic hydroxycarboxylic acids (mandelic acid, salicylic acid), which are commonly employed in dermatological practices. Randomized controlled trials,prospective cohort studies, and retrospective studies evaluating the use of organic acid-based chemical peels for acne managementwere identified from scientific literature. **Results:** The biochemical pathways through which these organic acids influence acnelesions, including their impact on comedone formation, inflammation, and post-inflammatory hyperpigmentation, are essentialfeatures which determines the efficiency of the treatment. The mechanisms of action of these organic acids involve exfoliation, anti-inflammatory properties, and the reduction of sebum production. Furthermore, implications of varying concentrations, pH levels, and application techniques of acids, elucidating their role in enhancing treatment outcomes and minimizing adverse effects, should be considered. **Conclusions:** Comparative analyses of different organic acids could provide valuable insights into their relative efficacies, safety profiles, and suitability for different skin types and acne severities. Additionally, it is essential to establish the synergy of organic acids with other therapeutic modalities, such as topical medications and light-based treatments, highlighting potential combination therapies that yield superior results. Also, patient selection, pre-peel assessment, and post-peel care are essential in optimizing organic acid-based chemical peels' overall efficacy and safety. Further research directions and emerging trends in this field are also discussed, underscoring the need for ongoing investigations to refine and expand the therapeutic options available for acne patients.

Keywords: acne vulgaris, chemical peels, acid peels, alpha-hydroxy acids, beta-hydroxy acids

EXPLORING THE PHYTOCHEMICAL COMPOSITION AND BIOLOGICAL EFFECTS OF BARK EXTRACTS FROM QUERCUS DALECHAMPII AND Q. FRAINETTO

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Background: The oak (Quercus sp.) bark is a result of the oak wood processing industry. It is considered a valuable by-product due to its' high bioactive compounds content, such as polyphenols. Thus, the aim of this study was to determine the phytochemical profile and bioactive properties of two less-studied species (Q. dalechampii and Q. frainetto) bark extracts. **Material and methods:** The oak bark extracts were prepared by ultrasound-assisted extraction (UAE) and microwave-assisted extraction (MAE). The total polyphenolic content (TPC) and tannin content (TC) were determined using the Folin-Ciocâlteu method, while individual compounds were identified and quantified using an UPLC-PDA method. The antioxidant capacity was determined by assessing the reducing ability of two different free radicals (DPPH and ABTS). The minimal inhibitory concentration (MIC) was determined to assess the extracts antimicrobial activity. Two more antibacterial assays were performed to determine the influence on bacterial biofilm formation and MRSA adherence to sutures. Cytotoxic and enzyme-inhibitory activities were determined using specific in-vitro assays. **Results:** The amount of phenols and tannins was similar for both species indicating that the MAE is a more efficient extraction method for these compounds, while the UPLC analysis completed the phytochemical profile, highlighting the main bioactive compounds, namely gallic acid, catechin, taxifolin, vanillic acid, epicatechin, and caffeic acid. Regarding the bioactivity, the results have shown that the extracts can exert cytotoxic effects at the highest concentration points tested. The extracts demonstrated inhibition of ⍺-glucosidase activity and exhibited a mild to moderate impact against Gram-positive bacterial strains and K. pneumoniae. The antifungal activity was weak and it was exerted only against C. krusei **Conclusions:** The obtained extracts were rich in phenolic compounds and tannins, especially the MAE extract. The mild antibacterial and cytotoxic effects are likely attributed to the phenolic compounds. Our results indicate the potential use of oak bark extracts in future pharmaceutical formulations.

Keywords: Q. dalechampii, Q. frainetto, antimicrobial, phenolic compounds, bark

ANALITYCAL STRATEGIES FOR QUANTIFICATION OF OXIDATIVE STRESS BIOMARKERS IN ORDER TO EVALUATE THE POTENTIAL ANTIOXIDANT ACTIVITY OF CARVEDILOL

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Background: Oxidative stress, plays a crucial role in numerous pathological conditions, including drug-induced toxicity. Malondialdehyde (MDA) and glutathione (GSH) are established biomarkers for assessing lipid peroxidation and antioxidant status. Our study is based on a critical literature review in order to develop and validate simple HPLC methods for quantification of MDA and GSH, the final objective being to provide a robust analytical tool for the comprehensive evaluation of the potential therapeutic benefits of Carvedilol, a non-selective beta-blocker with antioxidant properties, regarding the oxidative stress induced by Zidovudine, a nucleoside reverse transcriptase inhibitor. **Material and methods:** Based on scientific research databases (PubMed, ScienceDirect), a carefully designed experimental protocol was proposed for quantification of MDA and GSH from biological samples, such as plasma or tissue homogenates, treated with derivatization agents to enhance detectability. Furthermore, an experimental study on an animal model of Wistar rats will be conducted, implying different administration protocols of Zidovudine, Carvedilol and also Vitamin E as an antioxidant standard. **Results:** The ideal analytical methods for the aim of the study are represented by reversed-phase HPLC methods based on chemical derivatization, proving suitable linearity, precision and accuracy. It is expected that the application of the methods to biological samples would reveal significant alterations in MDA and GSH levels under conditions of induced oxidative stress, contributing to a better understanding of the intricate balance between reactive oxygen species and antioxidant defenses in various physiological and pathological contexts. **Conclusions:** The study emphasizes the significance of developing simple and rapid HPLC methods for quantification of MDA and GSH, providing an efficient means for assessments of oxidative stress in biological samples. The potential ability of Carvedilol to counteract Zidovudine-induced oxidative stress could provide a promising pathway for adjuvant therapy in individuals receiving antiretroviral treatment and the outcomes of this research may have implications for improving the safety profile of Zidovudine.

Keywords: oxidative stress, HPLC, malondialdehyde, glutathione, carvedilol

COMPARATIVE AND CRITICAL ANALYSIS OF INTERNATIONAL REGULATIONS FOR FOOD SUPPLEMENTS

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Background: Depending on local regulations, food supplements are complex products that can be classified as foods, drugs or functional food. Directive 2002/46/EC, transposed into Romanian legislation by Law 56/2021, defines food supplements as products that complement the usual diet. Food supplements represent products with various definitions and legislative classifications globally. This review aims to identify and compare how these products are regulated in various jurisdictions, focusing on product definition, health claims regulation, and quality control implementation. **Material and methods:** The researchincluded an exhaustive review of over 30 peer-reviewed articles accessed through recognised databases such as PubMed and GoogleScholar. The legislative documents were obtained by consulting each jurisdiction's official databases and government platforms:Romania, the European Union, the United States of America, Canada, Australia, Brazil, China and Japan, respectively, for articlespublished on the researched topic. **Results:** A detailed analysis revealed a variety of approaches to defining food supplements andpermitted health claims. For example, while in the European Union and the United States, supplements are strictly used tosupplement the diet, in Canada, they can be used for diagnosing, treating or preventing conditions, which suggests a closeness tothe drug category. A difference in the authorisation and notification processes of herbal supplements was also observed. Quality control varies considerably, with jurisdictions where responsibility rests entirely with manufacturers raising questions about consumer protection. **Conclusions:** The study reveals disparities in international food supplement definition and regulation, highlighting the need for a comprehensive understanding of these differences. These discrepancies could pose challenges for consumers, producers, and regulators in globalized trade. Further research is needed to develop evidence-based policies for better consumer protection and clarity for producers.

Keywords: Food supplement, Legislative harmonisation, Quality control, International regulations, Health claims

PHYSIOLOGY

EXPLORING THE LINK BETWEEN BLOOD-COUNT-DERIVED INFLAMMATORY MARKERS AND LIVER FIBROSIS IN PSORIASIS

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Background: Psoriasis patients are more likely to develop associated comorbidities. Liver fibrosis is partly due to the interleukin-17 pathway and to prolonged use of drugs, such as methotrexate-related, should also be taken into account. Non-invasive tests (NIT) can confidently rule out the presence of advanced fibrosis. **Material and methods:** Patients diagnosed with psoriasis vulgaris with no known vascular, liver, malignant, or metabolic diseases were enrolled in this study. The data was recorded from the hospital's electronic database. Psoriasis severity was assessed using the Body Surface Area score. Blood-count-derived inflammatory markers and NITs(FIB-4, APRI, GPR, and AAR) were calculated based on laboratory tests. Fibrosis severity was quantified using the FIB-4 score, with a cut=off of 1.3, and defined as mild (F0-F1, LR-SF) and moderate-to-severe (>F2, HR-SF). **Results:** Patients with HR-SF present with decreased values of peripheral neutrophils and lymphocytes and high values of monocytes. NLR and d-NLR did not vary significantly between the two study groups. PLR negatively correlated with liver fibrosis. APRI, AAR, MLR, PWR, and AISI proved to be significant independent predictors of liver fibrosis. All markers had a good predictive value (AUC>0.60). **Conclusions:** MLR, PWR, and AISI are useful blood-derived inflammatory markers in assessing liver fibrosis severity in psoriasis. APRI and AAR may be additional NITs in assessing liver fibrosis.

Keywords: psoriasis, liver fibrosis, inflammation

EFFECT OF PHENYTOIN SODIUM COMBINED WITH BETA-CYCLODEXTRIN ONSEIZURE-LIKE EVENTS IN AN IN VITRO MODEL OF EPILEPSY

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Background: Temporal lobe epilepsy (TLE) is frequently associated with pharmacoresistance. This phenomenon is partly causedby the poor pharmacokinetic properties of some of the available antiepileptic drugs (AED). Beta-cyclodextrin (BCD) is an excipient used to improve the solubility of several drugs due to its ability to encapsulate different molecules. In our previous research with AEDs requiring solubilization of the drug, we observed that BCD had its own impact. In our current study, we explore the influence of BCD on AEDs without the need of drug solubilization. **Material and methods:** We studied the effects of BCD associated with phenytoin sodium (PHT), an AED with good solubility, on the seizure-like events (SLE) in an in vitro model of TLE. Transverse slices were cut from the brain of juvenile rats and a microelectrode was placed in the CA3 region of the hippocampus. The sections were perfused with standard artificial cerebrospinal fluid (nACSF) in order to record the baseline neuronal activity. Seizure-like events (SLE) were induced by magnesium-free and high potassium ACSF (0MgACSF), followed by PHT in 25µM, 50µM and 100µM concentrations plus 1% BCD dissolved in 0MgACSF. **Results:** Our results confirm that BCD itself had an effect on SLEs. It significantly reduced the duration of the ictal and interictal periods to 76.4±5.25% (mean±SEM) respectively 68.3±4.77%. PHT in 25µM reduced the ictal length to 59.2±4.92% and the interictal length to 69.9±4.67%, in 50µM to 87.7±10.2% respectively 88.9±6.77% and in 100µM to 66.7±6.91% respectively to 88.1±4.16%. We observed that even in 25µM concentration after a while the SLEs were completely suppressed in more than half of the slices, this effect was not increased by higher drug concentrations. **Conclusions:** In conclusion BCD itself shortened the duration of SLEs and increased SLE frequency. The dose dependent effect of PHT suggests that BCD does not suppress the effect of PHT on seizure-like events.

Keywords: epilepsy, beta-cyclodextrin, neurophysiology, phenytoin sodium, in vitro model

PNEUMOLOGY

HEME OXYGENASE-1: EMERGING AS A POTENTIAL BIOMARKER IN SLEEP APNEA-INDUCED CARDIOVASCULAR DISEASE

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Background: Obstructive Sleep Apnea (OSA) is characterized by recurrent intermittent hypoxia (IH) episodes, leading to cardiovascular complications such as carotid atherosclerosis. Heme Oxygenase-1 (HO-1) is key in cellular defense against IH-induced oxidative stress, through heme degradation and subsequent cytoprotective molecule production. This review explores the regulation of HO-1 and its cardiovascular implications in OSA patients. **Material and methods:** A comprehensive literature search was conducted for peer-reviewed articles on HO-1 expression and regulation in OSA, and the effects of its metabolic products. Data were extracted regarding HO-1 enzymatic activity, transcriptional regulation under hypoxic conditions, the protective role of its by-products, and the association of HO-1 expression levels with cardiovascular diseases. **Results:** HO-1 emerges as a vital inducible enzyme within the hypoxic environment characteristic of OSA. Its regulation by the transcription factor Nrf2, with counter-regulation by Bach-1, forms a responsive system to oxidative stress induced by intermittent hypoxia in OSA. Through its enzymatic breakdown of heme, HO-1 produces biliverdin, carbon monoxide (CO), and ferrous iron, initiating a cascade of cytoprotective effects. Biliverdin, upon reduction to bilirubin, confers robust antioxidant and anti-inflammatory effects, pivotal in counteracting oxidative modification of low-density lipoproteins—a fundamental process in atherogenesis. CO, as a byproduct of HO-1 activity, exerts potent anti-apoptotic and vasodilatory actions, beneficial in improving vascular health compromised by OSA. These actions of HO-1 are critical in mitigating endothelial dysfunction and the subsequent progression of atherosclerosis associated with OSA, showcasing the enzyme's potential as a therapeutic target in this syndrome. **Conclusions:** HO-1 plays a multifaceted role in OSA's pathophysiology and its cardiovascular consequences, acting as a sentinel enzyme against IH-induced oxidative stress and potentially modulating atherogenesis. Our review highlights HO-1's intricate control mechanisms and their potential significance for cardiovascular health in OSA patients. Additionally, it underscores the correlation between HO-1 variations and cardiovascular risk, emphasizing the need for further research.

Keywords: Heme Oxygenase-1, Obstructive Sleep Apnea, Cardiovascular Disease, Intermittent Hypoxia, Vascular Dysfunction

THE IMPACT OF INHALED CORTICOSTEROIDS ON THE PROGRESSION OF COVID-19 IN PATIENTS WITH ASTHMA AND COPD

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Background: Inhaled corticosteroids (ICS) serve as the cornerstone in bronchial asthma management and a crucial component in severe COPD treatment. Their established efficacy in reducing airway inflammation and enhancing respiratory function is well-documented. Given COVID-19's inflammatory nature and severe respiratory implications, this study examines the relationship between ICS therapy and COVID-19 progression in asthma/COPD patients. It's important to note that severe COVIDpneumonia requires systemic corticosteroids to mitigate cytokine storms, and guidelines recommend concurrent ICS treatment in asthma/COPD patients with COVID-19. **Material and methods:** We monitored two groups of patients: 33 patients with asthma or COPD and COVID-19 pneumonia under ICS therapy, and 36 patients without these respiratory conditions and who were not receiving ICS. Careful case selection ensured similarities between the groups in terms of age and existing comorbidities. **Results:** The severity of COVID-19 forms was comparable in the two groups. In the group of patients with asthma and COPD on ICS, 18 had severe forms of COVID-19 and 15 moderate. In the second group, there were 18 severe forms and 18 moderate. The evolution of the cases in the first lot was favorable, despite the presence of asthma or COPD without the need for ICU, with 1 exception (severe case with death) and fatality/group 3%. There were no adverse effects of ICS. The group without ICS treatment recorded 4 deaths/36 patients (fatality 11.1%). This result suggests a beneficial effect of ICS in patients with asthma/COPD and COVID. **Conclusions:** Our observations suggest that the administration of ICS may play a plausible role in reducing severe inflammation in COVID. This association appears to be linked to favorable progression and lower mortality rates with the absence of adverse drug effects. It is important to note that further observations on large patient cohorts are needed to gain a deeper understanding of the mechanisms underlying these results.

Keywords: inhaled corticosteroids, COVID-19, asthma, COPD, fatality

CASE REPORTS: LONG TERM HOME NONINVASIVE VENTILATION – BENEFITS AND PERSPECTIVES

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Background: Noninvasive ventilation (NIV) provides ventilatory support in which ventilation is initiated by the patient but the ventilator recognizes/supports ventilation (not involving an invasive route: tracheostomy or orotracheal intubation). Home NIV (HNIV) is indicated in chronic hypercapnic respiratory failure. **Material and methods:** Presentation of 3 cases with alveolar hypoventilation and HNIV initiated/monitored in the Pulmonology field. **Results:** 69-year-old patient with amyotrophic lateral sclerosis presented with extreme asthenia, tachypnea, tachycardia, BP 160/100, rest dyspnea, long-term oxygen therapy (LTOT), respiratory alkalosis, somnography = desaturation 42 events/h. HNIV with positive pressure Bilevel-PAP was initiated: IPAP max16/min14 cmH2O, EPAP 6cmH2O, Tidal Volume (TV) 460ml, respiratory rate (RR) 18/min, nocturnal administration and4 series of 2 hours/day. Favorable evolution. Case2. A 31-year-old female patient weighing 200kg (BMI 78kg/m2) presented with obesity-hypoventilation (Pickwick) syndrome, severe type-II respiratory insufficiency (PaO2 30mmHg, PaCO2 98mmHg, HCO3 61mmol/L), multiple comorbidities: uncontrolled severe asthma, polyglobulia, severe obstructive apnea, HTA gr.III, ischemic heart disease, tricuspid insufficiency gr.III, cor pulmonale, chronic lymphedema, superinfected skin ulcers, post-sepsis condition (transferred from ICU). It is instituted in addition to the complex treatment of the underlying conditions, NIV in the Clinic and at home (IPAP max18/min16 cmH2O, FR 14/min, EPAP 8 cmH2O), TV 560 ml, settings for 7 hours during night + O2 2-4 l/min , +4 series of 2h daytime +LTOT. Favorable evolution with clinical and gasometric improvement. Case 3. 58-year-old patient with morbid obesity, post-exposure interstitial fibrosis, operated thyroid carcinoma, hypothyroidism, dyslipidemia, diabetes mellitus, ischemic cardiac disease, obstructive sleep apnea with severe respiratory failure. Nocturnal HNIV IPAPmax 22/minimum 20 cmH2O, FR 15/min, VC 560 ml, ≥6 hours/night with good evolution was initiated. **Conclusions:** Initiation of HNIV during hospitalization and long-term home-monitoring sustainably improves hypercapnia/hypoventilation and quality oflife in patients with various severe diseases: Pickwick syndrome, very severe COPD, neuromuscular diseases.

Keywords: hypoventilation, hypercapnia, non-invasive ventilation, long-term

OBSTRUCTIVE SLEEP APNEA PREVENTION: ACKNOWLEDGING THE RISK FACTORS

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Background: Searching for risk factors for sleep apnea (SA) allows for specific investigations, initiation of treatment and prevention of complications of the disease. **Material and methods:** We evaluated the risk factors for SA in 70 patients with SA and obesity-hypoventilation (OHS) hospitalized in the Pulmonology Clinic from October 2021- October 2023. **Results:** Men predominated (ratio M:W 1,8). 34,1% were smokers/ex smokers (percentage above the national average of smokers 26%). Average BMI 38,3 kg/m2. 5% presented chronic alcoholism and 15.8% were exposed to toxic substances. Older age was found in 48% (12 % ⊠70 year-old and 36% 60-70 year-old). 45.6 % had upper airway obstructions (allergic rhino-sinusitis, deviated nasal septum, retrognathia), 10.8% hypothyroidism (all women). Conditions were associated for obstructive SA but also for central apnea: 3% neurological coh (post-stroke status, advanced atherosclerosis, epilepsy), 56,9% severe arrhythmias, heart failure, neuromuscular causes (myasthenia gravis, paresis, sclerosis amyotrophic lateral). Heart disease (34,8 %) and diabetes 38,9% were both risk factors and complications of AS. 89,8% had obstructive AS and 3% central/mixed, 7,2% obesity hypoventilation (s. Pickwick). 78,6 % of AS was severe expressing multiple causes and late detection. 96% benefited from Continuous Positive Airways Pressure (CPAP) treatment, the rest refused the treatment. **Conclusions:** We encountered complex risk factors for SA, most of which arepreventable. Obesity was constantly found and associated with some conditions: diabetes, smoking, alcoholism, advanced age,exposure to respiratory toxins, male gender, sedentary lifestyle, hypothyroidism, superior airways obstructions, retrognathia. Allpatients with SA risk factors and symptoms will be referred by physicians of various specialties to sleep laboratory for somnography,sleep questionnaires, respiratory function tests and, if confirmed, targeted treatment with CPAP. Early detection of SA and OHS, treatment of the underlying conditions, adoption of a healthy lifestyle can prevent the SA, their comorbidities aggravation and complications.

Keywords: Obstructive Sleep Apnea, risc factors, somnography

PSYCHIATRY

PSYCHIATRIC REHABILITATION IN SEVERE MENTAL ILLNESSES AT THE ADULT MENTAL HEALTH CENTER IN SIBIU

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Background: WPA outlines the objectives of psychiatric rehabilitation, which include training emotional and cognitive skills, social skills, and community functioning with reduced support in the professional field. In Romania, on February 21, 1974, Minister of Health Prof. Dr. Theodor Burghele issued Order No. 86 approving the Plan of Measures for the years 1974-1975 and 1976-1980 regarding the defense and promotion of mental health in the population. On this occasion, the Mental Health Laboratory was established with responsibilities for the early and active detection of mental disorders, active detection of risk factors in the onset of mental disorders, implementation of appropriate measures for their treatment, prevention of irreversible decompensation, establishment of a diagnosis and a scheme for biological, social, and professional recovery, active monitoring of categories of "mentally defective patients." Support for mentally ill individuals and "defectives" in issues related to work, legal matters, family, and social readjustment, methodological guidance for basic networks, and community involvement in mental health promotion issues. Order 375/2006 proposes changing the title from LSM to CSM - MENTAL HEALTH CENTER and provides, on the one hand, similar obligations to LSM and, some difference on the other hand. **Material and methods:** The legislation from the year of establishment of the Mental Health Laboratory in 1974 and that related to the mental health reform in 2006 were reviewed. A summary of the services offered in the Sibiu Mental Health Center was mad **Results:** In particular, the Sibiu Mental Health Center has been continuously operating since 1974, initially under the LSM title, at that time. It offers actions as psychiatric , psychological, psycho-educational, social assistance, and bio-psycho-social rehabilitative services for severe mental illnesses **Conclusions:** The services offered in the Sibiu Mental Health Center have been continuous since its establishment in 1974 until now and are close to the WPA recommendations from 2006

Keywords: Mental Illness, Reabilitation, Functioning

A PSYCHIATRIC PATIENT`S ROUTE IN THE ROMANIAN MEDICAL SYSTEM

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[2],

Background: Patients who suffer from a psychiatric condition are prone to getting lost in the health system, due to the ambiguity of the laws and regulation, the overwhelming of the available professionals and to the lack of support from their families. Since most psychiatric pathologies have a chronic pattern, it is important to outline a few ground rules for these patients, in order to simply their access to medical care and to raise adherence to treatment. **Material and methods:** We reviewed the Romanian laws, hospital and out-patients internal regulations concerning psychiatric patients and complied the data with everyday experience in order to create a poster that illustrates the means available to the patients how to make use of them in an efficient manner, adapted to whichever need may arise **Results:** We created a graphic representation that illustrates a simplified route of available medical services with specific details for patients and their support system. **Conclusions:** Misinformation could be at the core of many failures in following a medical treatment and the cause of many psychiatric patients not receiving the proper care. With a visual approach and some very clear key points, both patients and their support system could see an updated perspective of the Romanian medical system.

Keywords: health system, psychiatric patients, Romania

SOCIO-ECONOMIC INFLUENCES IN THE MENTAL HEALTH CARE SYSTEM

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Background: Patients with chronic mental illnesses require access to a mental health care system adapted to their needs. There are major gaps in the mental health care system in different parts of Europe. The problem of institutionalization continues to be the prerogative of many countries, including Romania. We aimed to identify the main characteristics regarding the reform of the mental health care system in European countries, this presupposing both the deinstitutionalization process and the economic implications of the mental health services necessary to develop better policies and services for people with chronic mental illnesses.
Material and methods: We performed a document review related to the organization and operation of the mental health care system, the deinstitutionalization reform and its economic and social implications. **Results:** Deinstitutionalization represents the milestone regarding the care of patients with chronic mental illnesses with the aim of preventing chronic disabilities and stigmatization, respecting human rights and reducing the costs of mental health care. A review of the studies regarding the differences in approach, implementation, progress and results of the psychiatric reform process in European countries is important to be able to establish the objectives, the action plan, the resources and the potential difficulties for the countries that propose or are in the process of applying reform. **Conclusions:** In the last few decades, mental health systems consider the social integration of patients with chronic mental illness a major objective, and many countries have developed policies and interventions aimed at attracting better social reintegration.

Keywords: deinstitutionalisation, mental health system, psychiatric reform, healthcare expenditure, social integration

PUBLIC HEALTH

EXPLORING THE LINK: INFLAMMATORY BIOMARKERS IL-6, TNF-□, IFN-□, HSCRP, AND WBC IN HEALTHY YOUNG ADULTS AND THEIR ASSOCIATION WITH ANTHROPOMETRIC INDICES OF ADIPOSE TISSUE

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Background: Inflammation associated with obesity plays a key role in the pathophysiology of multiple chronic diseases. This study aims to evaluate the correlation of IL-6, TNF-□, IFN-□, hsCRP and white blood cell count (WBC) as inflammatory biomarkers and the anthropometric indices of adipose tissue in healthy young adults. **Material and methods:** This is a cross-sectional study, enrolling 128 apparently clinically healthy subjects aged 20-35 years, divided in overweight/obesity (OW/OB) group and normal-weight (NW) group, according to the body mass index (BMI). The clinical and pathological data were recorded by questionnaire. Subjects reporting inflammatory acute or chronic pathologies and anti-inflammatory drug intake were excluded. Anthropometric measurements, including arm circumference (AC), waist circumference (WC), and hip circumference (HC), were obtained. Additionally, bioelectrical impedance was used to measure total body fat mass (TBFM), visceral fat (VF), and BMI. The waist/hip ratio and waist/height ratio were calculated. Serum concentrations of IL-6, TNF-□, IFN-□, hsCRP, and WBC from venous blood were measured. **Results:** All anthropometric indices of adipose tissue (AC, WC, HC, TBFM, VF, BMI, waist/hip ratio, waist/height ratio) were significantly higher in the OW/OB group compared to the NW group ($p<0.0001$). The concentration of each inflammatory biomarker (IL-6, hsCRP, IFN-□, TNF-□, WBC) was significantly higher in the OW/OB group compared to the NW group ($p<0.05$). Significant positive correlations were found between hsCRP, TNF-□, WBC, and all anthropometric indices ($p<0.0001$, $p<0.05$, $p<0.05$). Additionally, IL-6 showed positive correlations with waist/hip ratio ($p=0.0218$), waist/height ratio ($p=0.0038$), BMI ($p=0.0101$), TBFM ($p=0.0251$), VF ($p=0.0075$), while IFN-□ correlated with HC ($p=0.0148$), BMI ($p=0.0253$) and TBFM ($p=0.0405$). **Conclusions:** After excluding common sources of inflammation, such as acute or chronic diseases, subclinical inflammation persists in association with overweight and obesity in healthy young adults. This work was supported by the George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, Research grant number 510/7/17.01.2022.

Keywords: IL-6, hsCRP, TNF-□, IFN-□, BMI

RHEUMATOLOGY

THE ASSOCIATION BETWEEN NEUROTICISM AND PERCEIVED PSYCHOLOGICAL DISTRESS IN CHRONIC PAIN PATIENTS

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Background: Chronic pain diagnoses involve multiple challenges for both the physical and psychological functioning. Reactions to such negative life experiences are highly influenced by personality traits, which define stable and global characteristics, impacting thoughts, emotions and behaviors. In particular, neuroticism represents a personality trait that has been linked to various negative outcomes, including psychological rigidity and maladjustment. Based on previous findings on the association between personality traits and subjective health, the aim of the present study was to investigate the relations between neuroticism, somatic and emotional variables in patients with chronic pain. **Material and methods:** This research used an observational transversal design and included 108 participants presenting widespread, musculoskeletal pain for at least three months. After participants signed the informed consent, personality traits, subjective pain, fatigue, anxiety, depression and psychological rigidity levels were assessed via self-report scales collected by the medical staff over a period of two years. **Results:** We found that neuroticism scores significantly correlated with depression ($p < .05$) and psychological rigidity ($p < .01$) levels. Another important outcome was related to the mediating effect of psychological rigidity on the relation between neuroticism and subjective pain and anxiety, respectively. **Conclusions:** As a personality trait characterized by heightened stress reactivity, neuroticism was associated to increased physical and emotional distress. This connection involves multiple interrelated factors, creating a complex model of interactions, in which psychological rigidity plays a pivotal role. These findings could contribute to the development of individualized multimodal interventions targeting different personality profiles in patients with chronic pain.

Keywords: chronic pain, neuroticism, anxiety, depression, psychological rigidity

SURGERY

SHORT-TERM CHANGES IN TNF-ALPHA, IL-6 AND ADIPONECTIN FOLLOWING LAPAROSCOPIC SLEEVE GASTRECTOMY IN ROMANIAN OBESE ADULTS.

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Background: Chronic inflammation is linked to obesity, type 2 diabetes, and cardiovascular disease. Adipose tissue mass affects adipokines and inflammatory cytokines, such as interleukin 6 (IL-6) and tumor necrosis factor alpha (TNF-alpha). Bariatric surgery reduces adipose tissue mass, potentially reducing cardiovascular risk factors. We hypothesize that LSG reduces cardiovascular risk factors and systemic inflammatory markers in obese patients. **Material and methods:** The objective of this study was to investigate the impact of laparoscopic sleeve gastrectomy (LSG) on adipokines (mainly adiponectin) and inflammatory cytokines (i.e. TNF-alpha and IL-6) in a group of Romanian individuals with severeobesity. A prospective study comprising eighty-eight patients was divided into three groups: the bariatric group (BG) (66 patients) and the control group (CG) (22 non-surgical patients). Evaluations were performed before surgery (BG0), after 1 year (BG1), and in the lean control group. All individuals included in this study (19 males, mean age 45.20 ± 13.05 years, mean body mass index (BMI) 46.34 ± 7.5 kg/m2) underwent bariatric surgery (31 sleeve gastrectomy, 1 Roux-en-Y gastric bypass, and 1 biliopancreatic diversion). **Results:** Compared to preoperative levels, significant decreseas were seen 1-year postoperatvely IL-6 (9369 ± 950.5 ng/mL to 5435 ± 1638.7 ng/mL, p< 0.010). The serum adiponectin increased significantly from 5672.95 ± 664.43 to 9470.39 ± 608.16 µg/mL 12 months after the operation(p< 0.024). In contrary, there were no significant changes in serum levels of TNF-alpha (7308 ± 1491 to 7226 ± 1853 ng/mL, p<0.726). The correlation analysis showed significant correlations between initial body mass index with TNF-alpha. **Conclusions:** There is a notable correlation between reduced systemic levels of IL-6 and adiponectin as well as excessive weight loss following LSG in individuals with obesity. The LSG may have a major impact on the inflammatory cytokine profile in obese patients, with possible protection from obesity-related comorbidities such as insulin resistance and cardiovascular disease.

Keywords: severe obesity, bariatric surgery, adipokine, inflammatory cytokines

ANTERIOR VERSUS POSTERIOR COMPONENTS SEPARATION IN COMPLEX INCISIONAL HERNIAS: MULTICENTER RETROSPECTIVE ANALYSIS

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Background: Complex incisional hernia is a pathology with increasing incidence, which maintains a high degree of postoperative morbidity and mortality. Complex incisional hernia is still a debatable topic, with increasing incidence and an increased local and systemic postoperative morbidity and mortality. However, it has been observed that the primary option for closing such a defect is an augmented mesh component separation technique. **Material and methods:** We performed a retrospective study by analyzing patients with complex incisional hernias from January 2015 to December 2021 in two university hospitals. Patients with primaryor recurrent defects, whose defects are larger than 6 cm and who underwent anterior or posterior component separation and who underwent complete fascial closure were included. Demographic data, recurrence rate, comorbidities, intraoperative data, postoperative complications, and imaging data were collected. **Results:** Following the data collection and the application of the exclusion criteria, a group of 202 patients was divided into two categories of 101 each. Patients who underwent posterior component separation had larger defects while having a higher rate of comorbidities. The procedure was 80 minutes longer butwith a shorter postoperative hospital stay ($p < 0.001$) for posterior component separation. Postoperative complications such asseroma, hematoma, and skin necrosis were equally distributed or both groups of patients and there was no direct relationship withsurgery ($p = 0.788$, $p = 0.318$ and $p = 0.119$). A higher rate of surgical site infection was observed with anterior component separation ($p = 0.004$). **Conclusions:** Abdominal reconstruction in complex incisional hernias is challenging given both the high rate of postoperative complications and technical difficulty. The choice of using the technique to separate the anterior and posterior components is still a source of significant debate, advocating for the surgeon's expertise. In our study, no major differences were identified between the techniques in the rate of postoperative complications.

Keywords: Complex incisional hernia, Anterior components separation, Posterior components separation, Postoperative complications, Multicentric study

THE IMPACT OF UV-A IRRADIATION ON THE GREAT SAPHENOUS VEIN GRAFT - AN EX-VIVO BIOMECHANICAL STUDY

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Background: Saphenous vein grafts (SVGs) are frequently used in peripheral arterial reconstruction due to their availability andlow risk of infection compared to synthetic grafts, but with low patency in long term, due to intimal hyperplasia. The purpose ofthis study is to present a new therapeutic method of mechanical augmentation of the SVG wall, based on ultraviolet radiation,through the photocrosslinking of adventitial collagen fibers. **Material and methods:** In this experimental study, we enrolled 16SVG samples, harvested intraoperatively from patients where a femoral-popliteal bypass with SVG was performed. The samplestaken were subjected to biomechanical analysis, and based on the force-displacements graph we calculated the biomechanicalprofile. Each specimen was then exposed to UV-A radiation at an intensity of 50 mW and a duration of 3 minutes. After an hour,the samples were re-analyzed at the biotester with the same protocol mentioned previously. **Results:** Following the irradiation ofthe samples at the adventitial level, we recorded a biaxial increase in resistance (Cauchy stress-kPa for OX axis: p=0.015 and OYaxis: p=0.008) and stiffness (Young's modulus- kPa, OX axis, p=0.036 and OY axis: p=0.022). We also observed a positivecorrelation between the benefit of the treatment and the age of the patient in terms of resistance (Cauchy stress-kPa for OX:r=0.856, pConclusions: Our study confirmed that the biomechanical degradation of the extracellular matrix occurs in elderlypatients, who are also the risk group for the development of atherosclerosis, and we have demonstrated that UV-A irradiation strengthens the biomechanical profile of the venous graft.

Keywords: Vascular surgery, Biomechanical Properties, Experimental Study, Photocrosslinking, Extracellular Matrix

PHOTOCROSSLINKING OF ADVENTITIAL COLLAGEN FIBERS BY UV-A IRRADIATION - A NEW THERAPEUTIC STRATEGY IN THE TREATMENT OF ABDOMINAL AORTIC ANEURYSM

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Background: Aneurysms frequently develop in arteries, and abdominal aortic aneurysm (AAA) is the most common in humans. In the absence of treatment, AAA can develop unfavorably with its rupture, having a high mortality rate. As part of our ongoing work, he aimed to develop a method to prevent or delay the rupture of abdominal aortic aneurysms. **Material and methods:** This translational experimental study contains, in the first part, an in vitro experiment in which we analyzed uniaxial biomechanical porcine adventitial tissue subjected to either short-term elastolysis or long-term collagenolysis in an attempt to duplicate two extreme situations as putative stages in aneurysmal degeneration. And in the second part, on human tissue, we analyzed the effect of UV-A irradiation on the biomechanical profile of the abdominal aortic adventitia. **Results:** The enhancing effect of irradiation was evident both on the tissue subjected to elastolysis, which had a high collagen-to-elastin ratio, and on the tissue subjected to prolonged collagenolysis despite being considerably depleted in collagen. Regarding the human aortic adventitia samples, we recorded an increase in resistance ($p=0.001$) and stiffness ($p=0.03$) in the longitudinal axis of the vessel, respectively a more important increase in resistance ($p=0.004$) and stiffness ($p=0.004$) in the circumferential axis of the aorta - being the axis of interest of aneurysmal development. Additionally, we observed a tendency to increase the benefit of the treatment in elderly patients, these patients being the risk group in this pathology. **Conclusions:** In this study, we documented the favorable effect of UV-A irradiation on the strength and stiffness of degraded aortic adventitia, in experimental situations that mimic the early and later stages of aneurysm degeneration, as well as confirming the efficacy of the treatment in human tissue. This mechanical augmentation by photochemical treatment can be a new treatment in the case of AAA.

Keywords: Abdominal Aortic Aneurysm, Vascular Surgery, Biomechanical profile, UV-A irradiation, Photocrosslinking

ASSESSING GASTRECTOMY OUTCOMES IN GASTRIC CANCER: A COMPARATIVE STUDY USING CONUT SCORE AND QLQ-STO22 QUESTIONNAIRE

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Background: Gastric cancer is a disease that can be treated with different types of gastrectomies each having its own impact, on the well being of patients. To evaluate the effectiveness of these procedures medical professionals use the CONUT Score, which assesses nutritional status and the QLQ STO22 questionnaire which measures the quality of life in individuals with gastric cancer **Material and methods:** In this prospective study we aimed to examine how different gastric reconstruction techniques affect the outcomes for patients with gastric cancer using the CONUT Score and QLQ STO22 questionnaire. By comparing these metrics across reconstructions we sought to gain insights into their impact on recovery and overall well being. We included all patients diagnosed with gastric cancer who received surgical treatment at Surgical Clinic 1 in SCJU Tg.Mures **Results:** During a span of three years we collected data from 64 patients. The common procedure performed was subtotal gastrectomy (72%). Our findings revealed that higher CONUT scores (with a mean score of 7) were associated with complications such as fistulas and hemorrhage in seven cases (p=0.001). On the hand patients with CONUT scores ranging from 1 to 2 reported no complications. Regarding the STO22 questionnaire we observed low scores, for total gastrectomies and subtotal (gastro jejunal reconstruction) compared to subtotal (gastro duodenal) anastomosis (p=0.003) **Conclusions:** In summary the study highlights the relationship, between the type of reconstruction and the postoperative evolution of patients with gastric cancer. We discovered that higher CONUT scores were associated with complications. The findings from the QLQ STO22 questionnaire revealed differences, in quality of life based onthe technique employed for gastrectomies highlighting the significance of approaches.

Keywords: Gastric Cancer, Gastrectomy, CONUT Score, QLQ STO22

UROLOGY

LAPAROSCOPIC APPROACH FOR RECONSTRUCTIVE SURGERY IN CONGENITAL MEGAURETER

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Background: Coparative with children diagnosed with megaureters, this pathology is less common finding in adults. This condition usually remain asymptomatic and can regress spontaneously or it can be treated during childhood or infancy. Primary obstructive megaureter is a known factor in urolithiasis and it is usually discovered during routine radiological examination.Our article objective is to present a case report of primary obstructive megaureter associated with multiple ureteral strictures, vicious insertions of ureter into the renal pelvis and abnormal renal rotation. **Material and methods:** We present a case report of a 25 years old female with urological symptomatology (hypogastric pain, flank pain, pollakiuria, recurrent UTIs) which debuted 4 years ago. Radiological examination (urography, CT scan) and intraoperative findings (uretero-pielography) revealed multiple ureteral strictures; reason why a double J stent was placed in 2019. The patient became asymptomatic after ureteral stent removal for following years. In May 2023, at urological follow-up, presented grade II hydronephrosis, we performed a uretero-pielography which objectified right megaureter and vicious insertion of the ureter into the renal pelvis **Results:** We performed pyeloplasty, due to the presence of abnormal vascularity around uretero-pelvic junction (two veins and one artery crossing-over the ureter) and laparoscopic 3D ureteral reimplantation into the bladder dome, after the resection of the stenotic part of the ureter. The patient had minum blood loss (aproximately 50ml), the drainage was supressed 3rd day postoperatory and she was discharged 4th day. **Conclusions:** Primary obstructive megaureter is a rare pathological finding in adults. Laparoscopyc approach offer a good visibility of the patient anatomy, an excellent fine disection of the tissue even in the pelvic and intramural part of the ureter.

Keywords: urology, laparoscopic, surgery, congenital, megaureter

PARTIAL NEPHRECTOMY IN RENAL CARCINOMA – MANAGEMENT OF CASES WITH POSITIVE SURGICAL MARGINS

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Background: Minimally invasive approach has revolutionized the surgical management of renal cancer since the initial report of laparoscopic nephrectomy in 1991. The most common histological subtype of kidney cancers is clear cell renal carcinoma, around 85% of all renal cell carcinomas. The aim of this study is to assess the relationship of surgical margins across different surgical approaches to partial nephrectomy and local recurrence. **Material and methods:** We performed a retrospective study between 2020 and 2023 that included a total of 52 patients who underwent partial nephrectomy for kidney tumors in Mures County Hospital, Department of Urology. **Results:** We had 52 patients with equal distribution by gender. 32 patients underwent laparoscopic and 20 open surgery. In histopathological findings R0-46 cases and R1-6 cases and just one case underwent radical nephrectomy at 6 month for local recurrence show by CT scan. **Conclusions:** Our data suggest that there are similar oncological results comparing laparoscopic approach versus open surgery. There weren't any differences between positive and negative surgical margins regarding oncological outcomes on short time follow-up.

Keywords: renal cell carcinoma, T1 renal tumors, partial nephrectomy, positive surgical margins, local recurrence

PREOPERATIVE PREHABILITATION TO IMPROVE URINARY CONTINENCE AFTER RADICAL PROSTATECTOMY

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Background: For localized prostate cancer, radical prostatectomy could be a curative treatment option. Despite of surgical treatment evolved considerably using laparoscopic or robotic approach, urinary incontinence is a common side effect among men who have undergone radical prostatectomy. **Material and methods:** Risk factors for urinary incontinence are associated with the patient and the surgical technique. Non-modifiable patient related risk factors are: an older patient, a shorter membranous urethra, striated sphincter hypothrophy and a larger prostate. Modifiable risk factors of to the patient are: obesity, metabolic syndrome, LUTS and a lower sphincter closing pressure. For better postoperative functional results the neuromuscular components of the membranous urethra should be preserved, also is important to maintain a longer membranous urethral length, to preserve the integrity of the pelvic musculature and the supporting structures of the urethra. **Results:** To improve the postoperative urinary continence and quality of life is required an adequate patient preparation. Exercising the pelvic floor musculature with Kegel exercises it helps to increase the strength, the activation, coordination and endurance of the pelvic floor muscles. This training is the primary, non-invasive conservative intervention for the management of postprostatectomy incontinence. The length of surgical wait time mostly influence the prehabilitation efficiency. During this period patients can experience anxiety, depression and fear of disease progression. The exercise-based preoperative interventions are 150 minutes moderate or 75 minutes high-intensity aerobic exercises per week and resistance training, resulting in a lower BMI and a smaller waist circumference. **Conclusions:** The time from the diagnosis to the surgery can be used for prehabilitation based on aerobic and anaerobic exercises to optimize the involuntary urine loss and better quality of life after radical treatment of prostate cancer, and most importantly without any side effect.

Keywords: prostate cancer, prehabilitation, urinary incontinence

RESULTS OF EXTRACORPOREAL LITHOTRIPSY IN THE TREATMENT OF KIDNEY STONES

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Background: Kidney stones are a common disorder, it is found in any culture or race. Extracorporeal lithotripsy is the first option of treatment for the patients with kidney- or ureteral stones, with dimensions between 1-2 cm. **Material and methods:** We conducted a retrospective study, for a period of 1 year(2021 january-2021 december).During this period 382 patients were evaluated and hospitalized in Urology Clinic Targu Mures. Each patient has the diagnostic with reno-ureteral-litiasis and has the indication of extracorporeal lithotripsy. **Results:** Out of the 383 patients analyzed 219 were males and 163 were females, the youngest patient was 18, and the oldest was 79 years old. For the majority of patients,over half of them, the stones has been fragmented over the period of 1 or 2 sessions of ESWL. A small number of patients needed 3 sessions of the aformentioned procedure.The majority of stones processed were located in the minor calyx, followed by the renal pelvis and the lumbar part of the ureter. A few patients showed partial fragmentation without elimination of stones, whereas others showed no fragmentation, as a consequence those patients represent the group that failed the ESWL procedure.For this group of patients,surgical procedures were carried out considering nephrolithiasis,namely Percutaneous Nephrolithotomy(PCNL) for 4 patients and flexible ureteroscopy(fURS) in the case of 35 patients. **Conclusions:** This study revealed that the most of the cases has been resolved with extracorporeal lithotripsy, and just a few cases needed of the other type of surgical procedures

Keywords: kidney, ureter, stones, eswl, results

SCIENCE AND TECHNOLOGY

DOCTORAL SCHOOL OF LETTERS, HUMANITIES AND APPLIED SCIENCES

MOTHER'S CLOCK. SONG OF PRAYER.

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Background: Communism regime has kept on stalking Valeriu Anania, perhaps not to the level and magnitude of those in his native land but the newspapers and press knew exactly how to find out more regarding the circumstances of a man who had become a renegade overnight with the same appearance of a Piedone, of an exotic actor but adapted as such in the American version. Valeriu Anania, a faithful critic of his own and a real restorer of them has exploited the importance of the major theme in the volume entitled *Anamnesis* compiled by Eminescu Publishing House in Bucharest. Once back in the country and isolated into the monastic environment, a series of various poems came out of the light at the *Văratec Monastery*, Valeriu Anania devoting most of his time to creative writing during his retirement. Although he can be labelled a poet of metaphors, the current volume's title is a strange one, but it conceals a lot of emotion and remains as such a proof of the author's own worship and the treasure he brings to his mother. This sort of relationship is on an upward trend, for him personal an example of strength and fairness which influenced and visibly shaped his entire destiny until his passing into eternity. Most of the texts bear of the appearance of lullabies, where not only the poet's affinity with native traditions is obvious, but the mother's presence is already a belated one, her whole breath seems obsolete, a consequence to ageing. The mediator Valeriu Anania is not impartial, but perhaps far too involved in the act, his inner being facing various cavities and rather traumatic impairments.

Keywords: Valeriu Anania, The Writer, Văratec, Eminescu, Hidden God

FINANCE AND ACCOUNTING

SUSTAINABLE REPORTING - IDENTIFYING REPORTING FRAMEWORKS IN ROMANIA

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Background: Optimal management of resources, of any kind, has become an imperative of contemporary times, and accounting achieves this goal when, built on correct principles, procedures and regulations, it provides the user with real information, complete and relevant. The purpose of this research is to establish, first of all, through a conceptual approach, what are the normative references to which the accounting professionals in Romania must appeal, and not only, on the format and content of the annual financial statements to align with the concept of sustainable reporting. The research methodology involved the analysis and synthesis of official documents and standards issued by international bodies, on the basis of which we made a foray into the literature on national regulations. Reviewing the literature and reporting frameworks, we find that the central axis is the balance sheet, to which is added the increasingly strong application of the non-financial statement.

Keywords: sustainable reporting, non-financial statement, audit opinion, reporting frameworks

HISTORY

COMMUNIST PROPAGANDA THROUGH SPORT

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Background: COMMUNIST PROPAGANDA THROUGH SPORT The year 1945 also represented a first nationalization of some components of society. A first step was taken in sports activity, targeting professional sports clubs. After the Second World War, only the Sportul popular newspaper continued to promote the ideas of sport and physical education, being the only training center for sports journalists, then recognized as true writing professionals. The "Progressive Youth" organization was organizationally linked to the sports movement. Actions aimed at propaganda and sports events on popular holidays were channeled to strengthen the image of the Groza government and hit the "old system", thus fueling rivalries at the level of society, especially in villages where there was an uneducated population that had often been ignored by the central authorities. Physical culture and sport had not become an important factor in the education of the youth in 1948. The work of raising the ideological, political and cultural level was weak in the sports teams, and the technical level of the sport continued to be low. After 1950, communist propaganda presented the huge step forward by including the large masses of youth from cities and villages, in the production activity, registering at the same time a significant increase in their technical level. The progress achieved in all aspects of physical culture and sports was due, in the communists' view, to "the successes recorded by the working people in their tireless struggle to fulfill and surpass the first State Plan of the Romanian People's Republic." The communist state had started after 1950 to invest in sports bases in cities and villages. The putting into use in recent years of numerous athletic tracks, volleyball courts, shooting ranges, gyms, swimming pools and velodromes throughout the country were mentioned.

Keywords: communism, propaganda, sport, youth, new man

THE MERCURIUS SANCTUARY FROM SAVARIA

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Background: In this conference I will discuss a part of my PhD. thesis entitled ,,The cult of Mercurius in the Roman Danubian provinces between the 1st and 4th centuries AD, namely the Mercurius Sanctuary from roman Savaria, the modern Szombatheli from Hungary. The patron diety of travelers and commercial activities, Mercurius has a relatively low numbers of sacralised spaces. The aim of this work is to contribute to the study of this broad topic of religious practices during the Roman Empire, focusing on how individuals related to the deity. To achieve this aim I will draw largely on epigraphic material and archaeological finds.

Keywords: Space sacralisation, Glocalisation, lived ancient religion

ISTORIE

THE IMAGE OF CATHERINE DE MEDICI BETWEEN THE NIGHT OF SAINT BARTHOLOMEW AND THE ESTABLISHMENT OF THE FRENCH REPUBLIC

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Background: Art and literature were sometimes used as political weapons. Historical events can receive other meanings studied through the prism of paintings or literary works. One such example is the image of Catherine de Medici. Documentary historical sources combined with artistic and literary ones offer us today a more complete picture of this queen of France and help us to understand the political and social evolution of an important period in the history of France. A Catholic foreigner who became the regent was accused by the Huguenots (French Calvinists) of having planned the massacre of Saint Bartholomew's Night. Huguenot partisan paintings of the time regarding this event constructed, disseminated and used the image of a tyrannical queen for a political purpose: the right of non-acceptance of a despotic king, an image that entered the collective memory and that was used centuries later, both through paintings and in literature, this time with another political goal: the abolition of the monarchy.

Keywords: Catherine de Medici, art, paintings, literature, history, France, Catholics, Huguenots, political goals, monarchy, republic

THE CONCEPT OF VIOLENCE, AS APPROACHED BY FRENCH MEDIEVAL DEVOTIONAL ICONOGRAPHY IN FOUR REPRESENTATIONS FROM THE 15TH CENTURY

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Background: The syntax of violence in Medieval imagery is directly related to the processes involved in the shaping and development of Christianity and royalty, but also to biblical myths that are repeatedly identified during several periods of the Medieval Age. Just as the Temple is the pure place where the clerical detaches itself from the promiscuity of the crowd, the image is nothing less than the sublimated temple, the house of the spirit reduced ot h more than two physical dimensions, i.e. hight and width, at the same time it being the receiver of a third spititual dimension conveyed by the Divinity it represents. As the immaterial Word is perishable once spoken, the Image, on the other hand, persists ot ha the actual meaning conveyed to it as part of the materiality of the painting, fresco or any other type of visual representation. Therefore, appearing side by side as part of a manuscript, word and image act as the two dimensions of knowledge. For this particular essay, I have selected four paintings from the 15th century, in an attempt to merge the French Medieval frame of mind and the art of painting. Image itself and violence have a lot in common, even if one means resting and the other one means taking action. Both of them are the creation of the human being at a certain moment of his evolution, while both of them have been challenged or approved of during the course of history and, together, have had a significant influence on European society through the ages.

Keywords: Violence, Image, Medieval, Paintings, History

LANGUAGE- PHILOLOGY

SEMANTIC WAYS TO CREATE TERMS IN THE FIELD OF BOTANY

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Background: Semantic ways to create terms in the field of Botany Abstract Ph.D.student, Suciu (Fodor) Daniela In Semantic ways to create terms in the field of Botany, we addressed issues regarding the external terminology in the field of Botany. We stopped at two semantic ways to create terms: the terminologisation and the transfer of meaning used in the formation of the specialized metaphor. Terminologisation is a semantic process that consists in the extension of meaning, in the modification and the addition of new conceptual features to the words in the common lexicon, without the use of an analogy. For example, the word from the general lexicon frate - brother- appears in the terminological phrase trei-fraţi-pătaţi - three-spotted-brothers- which designates the plant named hearts-ease (Viola tricolor). The terminological metaphor is formed on the basis of a pre-existing cognitive pattern and on a transfer of meaning towards the target domain. The terminological metaphor has no emotional, subjective value, only a cognitive one. We will illustrate with metaphors that are based on the names of gods, religions and beliefs, habitat, names of researchers: microflora, anemones, cell, magnolia.

Keywords: terminologisation, terminological metaphor, semantic

LINGUISTICS

INTERNAL VERSUS EXTERNAL DENTAL TERMINOLOGY

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Background: Terminology asserted itself as a science, manifesting itself through two significant theories in defining the basic concepts with which it operates: internal terminology and external terminology. Currently, the medical language has not given up the Latin or Greek elements that for the Romanian medical terminology, as for the international medical language, represent fundamental lexical landmarks, nor the neologisms of French origin. Through popular Romanian medical terminology, we aim to demonstrate the existence and role of popular medical terms in shaping the Romanian medical language. With the expansion of the English language in medical terminology it should be stated that in the structure of English medical terminology there is a layer of terms of Latin origin, terms that have adapted to the Anglo-Saxon linguistic system. This study presents aspects of dental terminology within the specialized medical terminology.

Keywords: terminology, medical, dental, internal, external

NEW TRENDS IN HUMANITIES

VOCABULARU ROMANO-FRANCESU – THE FIRST PRINTED EXPLANATORY DICTIONARY OF THE ROMANIAN LANGUAGE

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Background: Vocabularu romano-francesu, belonging to Ion Costinescu, represents the first and only general explanatory dictionary of the Romanian language from the second half of the 19th century. Published in the so-called "transition stage" of the history of Romanian lexicography, Costinescu's dictionary exceeds, in proportions, all previously printed lexicographic works, comprising approximately 35,000 words, from archaisms and regionalisms to neologisms, lexical units belonging to specialized fields and own names (mythological, historical and literary). It also provides a complex picture from the point of view of the development of the lexicographic technique by the scale of the explanatory part, the clear and precise formulations of the author, in a language superior to that used in previously published Romanian dictionaries, the orientation towards the encyclopedic definition, accompanied, in the case of numerous linguistic units, by illustrative contexts. The importance of this dictionary is due to the intentions of the editor to implement a unitary style, to establish a coherence and cohesion in the internal organization of the lexicographic work, attempts to standardize and systematize the dictionary article in all its sections.

Keywords: dictionary, explanatory, 19th century, transition, lexicographic technique

JEWISH GENDER IDENTITY IN THE AGE OF TOTALITARIANISM AS REFLECTED IN THE WORKS OF EVA HEYMAN, GISELLA PERL, ANA NOVAC AND MARIA BANUŞ

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Background: It has always been believed that history is created and written by men. However, as far as the Holocaust is concerned, women voices must not be neglected, as they tell a very different story, seen from a different perspective. In no other time in history has Jewish gender identity been so challenged as during the Holocaust. However, in order to get the whole picture of the Jewish issue as seen by Romanian women writers of Jewish origin we must analyse the works of women from different regions and social backgrounds in order to get the whole picture of what being a Jewish woman was in the 1940s. This is why we have chosen to speak about the Jewish issue as seen by Eva Heyman, Gisella Perl, Ana Novac and Maria Banuş. We have chosen these writers as they come from various regions, they experienced anti-Semitism differently and meanwhile, their later life was different as well. Not all of them are writers of profession; some are the products of History at its worst, so the literary value of their work differs as well. Their accomplishment is that they manage to tell their story, a story that, although different, is the story of destruction and loss of an age of innocence.

Keywords: Holocaust, Gender, Totalitarianism, Identity, anti-Semitism

THE PERCEPTION AND ROLE OF DEATH IN THE ROMANIAN FOLK BALLAD UNIVERSE

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Background: Death and the afterlife have been subjects that have preoccupied humans since ancient times because they have a direct connection to their own lives andthe lives of those close to them. The desire to understand more about how the Romanian popular mentality perceives death and to identify possible archetypes related to this reality led me to research the universe of native popular traditions in my doctoral thesis (''Death and the afterlife: an Ethno-Folcloric Perspective''), giving special attention, among other things, to the ballad genre. Using the hermeneutic method, I identified the roles that death plays in six different ballads and their variants. Death is most often linked to a curse (as can be seen in the ballad ''Voica'', where the elder brother cannot rest in eternal sleep due to his mother's curse). However, the death of a person can tragically constitute the ultimate sacrifice to achieve an objective. In ''Monastirea Argeşului'', Master Manole sacrifices his wife on the altar of creation: the walls of the monastery collapse every night until the woman's body becomes part of the structure. Marriage represents another theme that, perhaps surprisingly at first glance, can be in contact with death: in some ballads, the bride dies on the day of the wedding, thus, death has a negative, destructive effect. However, in other ballads, only through death can the two lovers achieve the union that was forbidden to them during their lifetime.

Keywords: archetype, curse, creation, sacrifice, wedding

TRADITIONALISM AND ORTHODOXY IN THE POETRY OF ION PILLAT

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Background: Traditionalism points literature towards the rustic universe, as well as towards the values of tradition (history, folklore), to which orthodoxy is added as a defining element of the Romanian soul. Interwar traditionalism lives in the present, looks back onto the past, developing a poetics of melancholy, nostalgia, without embellishment and excessive idealization of the past. Remembrance and memory play a fundamental role in Ion Pillat's creations. They recover his roots, in an anamnestic approach that suggests the nostalgia of originality and the bliss of a mythical time. It is the remembrance that brings to light a spiritualized space, configured rather as an affective projection. Within the poet's work, we distinguish two different situations, from this cult that is childhood-inherited: a good knowledge of our popular culture as well as the difference between the mythology of the Romanian people and the tendency towards the transcendental, considering the earth as a "valley of lamentation", preparing the happiness of an absolutely spiritual eternal existence, in heaven, common to the official religion. Keywords: traditionalism, orthodoxy, remembrance, memory, faith.

Keywords: tradiţionalism, ortodoxie, amintire, memorie, credinţă

MIGRATION OF PHILOSOPHICAL TERMS IN LITERARY CRITICISM

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Background: The migration of philosophical terms in literary criticism is a complex and dynamic phenomenon that hasprofoundly influenced the evolution of both domains. This migration involves more than a mere transfer of vocabulary. It requiresa nuanced understanding of the philosophical concepts being employed and their adaptation to the specificities of literary analysisand it involves a dynamic exchange where ideas from both domains influence and reshape each other. This reciprocal relationshipcreates a fertile ground for intellectual exploration and innovation. While the migration has led to fruitful intellectual cross-fertilization, it is not without challenges and controversies. One challenge is the potential for oversimplification or misappropriationof complex philosophical ideas in the context of literary analysis. Literary critics may selectively use philosophical concepts,overlooking their intricate nuances and historical contexts. Additionally, there is a risk of reducing philosophical diversity to a set offashionable or easily digestible ideas. Certain philosophical movements or thinkers may become disproportionately influential in literary criticism, overshadowing less mainstream or unconventional perspectives. Furthermore, the appropriation of philosophical terms in literary criticism raises questions about the legitimacy of interdisciplinary boundary-crossing. Despite these challenges, the migration of philosophical terms to literary criticism continues to be a dynamic and evolving process. It reflects the inherent interdisciplinarity of human thought and the fluid boundaries between philosophy and literature. As literary criticism continues to evolve, it is essential to approach the migration of philosophical terms with a commitment to intellectual rigor and sensitivity to the complexities of both disciplines. This involves a nuanced understanding of the philosophical concepts being employed, a recognition of their historical and cultural contexts, and a willingness to engage in interdisciplinary dialogue that transcends rigid disciplinary boundaries.

Keywords: Philosophical Terms, Literary Criticism, Migration

EXPLORING THE AUTISTIC LITERARY CHARACTER AND ITS REPRESENTATION

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Background: Background: The scientific landscape is marked by an ever-growing awareness of the intricate nature of neurodevelopmental disorders such as Autism Spectrum Disorder (ASD). In this paper, the main objective is to underline the psychosocial dimensions of accurate representation of atypical literary characters. The literary character is an essential element in the structure of an epic or dramatic text. In portraying autistic characters, it is essential to take into consideration that ASD has different manifestations in different individuals. This paper has at its core an analysis of "Planet Earth is Blue" by Nicole Panteleakos, which portrays a non-verbal autistic young girl, and the obstacles she faces. In analyzing Nova, the methodology focuses on five pillars that represent challenges for autistic people: communication, sensitivities and adaptability, relationships, the need for structure and self-injury. Material and methods: The methodology adopted for this paper entails a fusion of textual analysis, literary theory, psychological insights, and conceptual frameworks derived from psychological studies. Central to the methodology is an in-depth examination of the book mentioned above. Results: Nicole Panteleakos' Nova is given a thoughtful, accurate and positive description as she is seen as a young girl with much potential and is given the space and confidence needed to spread her wings and evolve. Nova is the type of character that can foster both a sense of inclusion and identification to autistic people, but she can also be a source of inspiration and provide a lesson on autism within neurotypical communities. Conclusion:The portrayal of authentic disabled characters in literature is essential in order to foster empathy and to address the issues of people on the margins of societal norms. However, it is essential that their portraits are constructed in a positive approach so that they do not promote judgement or negative feelings towards impaired people.

Keywords: autism, literary character, literary representation, autistic character, Planet Earth is Blue

A CASE OF TREPONEMA PALLIDUM INFECTION IN THE LATE MEDIEVAL CEMETERYOF MANEA BRUTARU CHURCH IN BUCHAREST

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Background: Archaeological research carried out between 2020 and 2023 inside and around the church of Manea Brutaru in Bucharest led to the discovery of 205 graves and another 35 reburials. The church, which dates back to the second half of the 18th century, overlaps a necropolis with four phases of use. Approximately half of the graves had grave goods, some individuals were buried in wooden coffins, and a very small number of graves had richer grave inventory. Along with the richer hair ornament made of textile material, hairpins and glass beads, the individual in M 46 showed pathological transformations consistent with *Treponema pallidum* infection.

Keywords: bioarchaeology, infectious disease, late medieval, necropolis, venereal syphilis

THREE HYPOSTASES OF LUCIAN BLAGA'S EROTIKON. ELEMENTS OF POETICS IN HIS EPISTOLARIES

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Background: The paper addresses a topic of deep significance both for the history of Romanian literature and for Lucian Blaga's poetics, regarding the impact of the last three muses in the poet's life on his creative personality. Five muses are part of the Blagian erotikon, as it is known: Cornelia Brediceanu, Domnița Gherghinescu-Vania, Coca Rădulescu, Eugenia Mureșanu and Elena Daniello. It seems that three of them would have played an important role in reviving his creative spirit and in overcoming the existential crises he went through. The meeting of the poet with the last muse was a providential moment, having an overwhelming influence in the resurrection of his creative energy as well as at a strictly human level. We will follow the biography of the female figures who created a fertile ground for the appearance of masterpieces and/or for the consolidation of older projects of the Romanian poet. Blaga's correspondence is an integral part of the cultural heritage that the poet left us. It provides valuable information not only about his biography and the picture of the epoch in which it profiles, but also about Blaga's poetics. Written in a poetic language of the highest quality, Blaga's epistolaries testify to the inner transfigurations of the poet, the effervescence and anxieties that animated him, the stages of creative plenitude, attesting, at the same time, the idea that, under the auspices of spiritual connections with his muses, some of the masterpieces that enriched the heritage of Romanian culture were born. The aim of this paper is, in fact, to demonstrate that, beyond their documentary or aesthetic value, Blaga's epistolaries constitute an authentic document of literary poetics, decisive for the understanding of his creation mode, the aspects of which deserve to be recovered for a correct interpretation and assessment of his work meaning.

Keywords: Lucian Blaga, Domniţa Gherghinescu-Vania, Elena Daniello, erotikon, correspondence

THE ROMANIAN MEDICAL AND PHARMACEUTICAL SCHOOL DURING COMMUNISM

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Background: The university education in medicine and pharmacy has experienced a development after 1948 in terms of the number of students and graduates trained. Six important university centers were established in Bucharest, Cluj-Napoca, Iași, Timișoara, Târgu Mureș and Craiova, the last one founded in 1970. Of these, only Timișoara maintained the name of Institute of Medicine throughout the period 1948-1989, as it did not include the Faculty of Pharmacy, and Craiova was the only educational center with a Faculty of Medicine not included in a specialized institute. It should also be said that there were four major specializations: general medicine, pediatrics, dentistry and pharmacy, grouped since 1974 into corresponding specialization. In the structural evolution of medical and pharmaceutical educational institutions, four important periods can be distinguished: establishment, contraction, development and again contraction. The most important university center in this field was Bucharest, and the most important specialization in terms of students enrolled was general medicine. Other statistical indicators reveal new interesting aspects: the highest enrolment figure was recorded in 1976, 4897 students; the highest number of graduates was in 1981, 4263 graduates; more than 9% of all Romanian higher education graduates in the period 1948-1989 were doctors and pharmacists. The most important decade was 1980-1989, when on average there were 3420 graduates, certainly a delayed effect of the high enrolment figures of the previous years, to which the attractiveness of Romanian higher medical-pharmaceutical education for foreign students also contributed a lot. The period after 1948, especially 1975-1985, was one of development of higher medical-pharmaceutical education from a statistical point of view, possible also as result of an institutional stability created in the 6 university centers that supported in their turn the process of training specialized staff for the Romanian health system.

Keywords: Pharmacy, Medicine, Communism, Health, Students

TUDOR ARGHEZI'S WORK

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Background: Tudor Arghezi's work, a volume published in 1979, is a mapping of the writer's work. In the twenty chapters of the Nicolae Balotă's work, he tries to make a radiography of the Arghezian lyrical universe. Nicolae Balotă divides Arghezi's work in two antagonistic religious coordinates. The scholar gives Arghezi's work the image of a purgatory, which contains many poems written in a paradisiacal vision of the world and at the opposite pole are the poems that give the reader his vision of life as hell. What makes this volume special is that at the beginning of each chapter, there is a list of key words, so the reader can get an idea of what is to come.

Keywords: Balotă, Arghezi, poem, religious, Lyrical univers

PHILOLOGY

THE ELEGIC CONFESSION IN THE POETRY ASSEMBLE OF ION HELIADE RĂDULESCU

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Background: After Dimitrie Cantemir, the second great personality of Romanian literature is undoubtedly Ion Heliade Rădulescu. He is an writer with a great soul and We can meet him as a poet, prose writer, translator, linguist, journalist and politician starting around 1840 in Romanian culture and life.The elegiac confession doesn t have a very significant weight in the whole of Heliade's poetry. Without, in principle, minimizing this kind of poetry, he feels attracted by the wide and tumultuous unfolding of its militant reflexive lyricism.Even if the poetic language of his time had few resources in terms of expressiveness, Heliade succeeds in the Anatolide or man and forces to give us a description of the paradisiacal atmosphere of the Empire, seen as a sublime celebration of God-son

Keywords: ION HELIADE RĂDULESCU, BIBLE, DIMITRIE CANTEMIR, THE ELEGIAC, POETRY

PHILOLOGY

THE HEALING WORD. THERAPY THROUGH READING

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Background: In a universe dominated by a continuous oscillation between appearance and essence, the act of reading can become a therapeutic refuge. The healing effects of reading have been analyzed time over time again and have been enmeshed in precious writings. Each of us has experienced the inestimable value of a book, identified with characters, situations, feelings, has turned into the story itself. A story whose ending we discover as reading enchants us, perfects us. We are living stories that live, suffer, dream, discover ourselves through literature. We heal. Reading, therefore, incites the exploration of one's own person, becoming a pretext for our continuous transformation.

Keywords: bibliotherapy, reading, healing, literature, love

THE GRAPHIC NOVEL. A BRIEF HISTORICAL APPROACH

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Background: The literature field is transforming in the digital age. The rise of digital media shortened attention spans, and changing reading habits have prompted a reevaluation of how classic literature is presented and consumed. Graphic novels offer a dynamic and visually engaging format that can bridge the gap between traditional literature and modern readers. In today's multimedia-rich environment, blending text and visuals has become increasingly important. Graphic novels exemplify multimodal storytelling, where images and text work in tandem to convey complex narratives. Investigating how classic literary works are adapted into this multimodal format contributes to our understanding of evolving storytelling techniques. Classic literature often addresses timeless themes and societal issues. By analyzing how these themes are translated into graphic novels, we could understand how these narratives remain relevant and resonate with contemporary audiences.

Keywords: graphic novel, storytelling, multimodal

SCIENCE AND TECHNOLOGY

THE NEXT STEP IN FORMAL VERIFICATION OF SECURITY SERVICES

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Background: Traditionally, formal verification tools and models are leveraged to prove the correctness of security services under a known set of assumptions and a threat model. While in security this is considered mandatory as a good practice, it can lack explanations on how, when, and why certain security services constructs can be compromised. In this study, probabilistic time automata are considered as a possible security property modelling solution, capable of determining at security service design time what are the probabilities that certain security properties are not guaranteed under different operational environments.

Keywords: formal verification, probabilistic time automata, model checking, security services

AI-SUPPORTED SPORTS SAFETY AND PREVENTIVE HEALTH SOLUTIONS IN PERFORMANCE SPORTS

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Background: Artificial intelligence (AI) has become an indispensable tool in the field of sports science, providing unparalleled benefits to athlete health, training, and performance optimization. Our research delves into four major AI-based application pipelines in sports: Firstly, we underscore the significance of early detection of brain injuries and anomalies in sports using AI-assisted health anomaly detection systems because of their superior real-time image analysis accuracy. By leveraging Neural Architecture Search, transfer learning, multimodal learning, and explainable AI, our study aimed to establish a machine learning (ML) pipeline for sports safety, facilitating early identification of brain injuries and reducing severe complications.Secondly, we investigated the potential of voice-based disease detection through AI. Merging expertise from data science, linguistics, ML, and medical research, our goal was to devise a ML pipeline capable of predicting diseases from voice samples. This method serves as a non-invasive, cost-effective, and widely accessible diagnostic tool, offering personalized health insights.The third area of focus was the integration of AI in athlete training and rehabilitation. Our study emphasized the breakthroughs AI has achieved in biomechanical feedback, particularly in refining athletes' techniques. AI-driven cognitive tools sharpen athletes' decision-making skills, while the mental well-being of athletes is also monitored, helping identify early emotional distress signs.Lastly, our research explored the application of AI in predicting athlete burnout using text analysis. By integrating sports science, psychology, and advanced ML models such as BERT and GPT-3, we analyzed athletes' textual data to discern sentiments hinting at burnout. Correlating these sentiments with physical metrics, AI helps in proactively addressing potential burnouts, facilitating tailored training schedules, and enhancing athletes' longevity in their careers.In conclusion, AI's multifaceted applications in sports science promise transformative advancements in athlete health, training, and performance. Our comprehensive experiments validate the robust capabilities and potential of AI for revolutionizing sports science.

Keywords: voice analysis, sentiment analysis, MRI, burnout, disease detection

THE POLEMIC BETWEEN PAUL ZARIFOPOL AND GARABET IBRĂILEANU. THEORIES AND THE BATTLE OF WITS

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Background: The present paper focuses on the polemic between Paul Zarifopol and Garabet Ibrăileanu, one of the best examples of the polemic of ideas in romanian culture. The paper traces the path of the polemic between the two, considering the appropriate critical methods of analyzing and interpreting literary works, in relation to the specifics given by a tradition of criticism, to the specifics of literature, but also to the local public. Advocating for different aesthetic conceptions, respectively for aesthetic criticism (Zarifopol) and complete criticism (Ibrăileanu), the aim of the paper is to highlight the theories and the battle of wits found in the polemic between the two, carried out under the dome of the passion for truth, of the high intellectual preciousness, on a field in which mutual respect and admiration for great values ⊠⊠take precedence.

Keywords: polemics, aesthetic conceptions, critical methods, literary works, Romanian critical theory

STUDY OF NOISE, VIBRATION AND HARSHNESS (NVH) ON HEAVY VEHICLES

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Background: The issue of interior noise and vibration levels remains a topic of interest for NVH researchers, who need to adapt to new technical innovations. The vibro-acoustic performance of vehicles is now a key purchase decision indicator, and as a result vehicle manufacturers are investing inexhaustible resources of time and money to determine and combat noise at various frequencies within the audible range of passengers. In a complex dynamic system such as a truck cabin, a number of variables come into play in the issue of interior noise and vibration. NVH studies can solve the problems associated with achieving a certain level of comfort in vehicles. Exposure to a certain level of noise and vibration can be classified as a hazard and becomes a stressor for vehicle occupants if exposed within a standard eight-hour period. This study was conducted in a heavy vehicle. Passenger vibration exposure was measured using a Triaxial accelerometer, while noise exposure was measured using a B&K 2245 sound level meter. The findings indicate that both vibration levels and sound pressure increase proportionally with engine speed and are at levels that are detrimental to the health of the passengers as exposure time increases.

Keywords: NVH, noise and vibration exposure, vibro-acoustic performance, comfort in vehicles, time of exposure

ROMANIAN LITERATURE BETWEEN WORLD WAR I AND WORLD WAR II

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Background: This study is about the progress of Romanian literature between 1918- 1939. This is "The Golden Age" of Romanian writers and Romanian works because of the novels, poems and drama that were written. Ones of the most iconic Romanian works were created during this age. It was a hard working process for the Romanian writers to remove the traditional influences from Romanian literature and upgrade it to european writing. Even though the culture of a nation is sacred, that was a necessary operation because everything was in a powerfull process of changing. The new ideas were loved and the old fashion ones were hated. It was all about the society development and because of the new mentality. Everyone was ready to enter a new phase. The people decided to leave tradition and live the new world.

Keywords: literature, writers, development, process, tradition

IMPROVING THE EFFICIENCY OF INDUSTRIAL ENTERPRISES THROUGH MONITORING AND ANALYSIS PROCESSES OF THE ENERGY CONSUMPTION OF INDUSTRIAL COMPRESSED AIR COMPRESSORS

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Background: Background: Compressed air represents a total energy consumption of approximately 20% of the total industrial energy consumption, being usually considered one of the most expensive utilities in the industry. In this work,a new method for monitoring the energy consumption of industrial compressors for the production of compressed air is developed with the help intelligent meters through which all electrical parameters of the compressors are measured.Material and method: A study was carried out in a production hall in the automotive sector where compressed air is produced. The energy consumption of 3 compressed air compressors was collected and analyzed using data collected. The measurement model used to record the compressor operation data is the Janitza multi-function electrical network analyzer. The selection of statistical parameters of the compressors regarding the consumption of electricity are given by monitoring the power and the energy consumed.Results: The electricity consumption monitoring method was applied to an automotive production hall, for a group of 3 industrial compressors, whose purpose is to supply compressed air in production processes. As a result, the summation of the power consumed by the 3 compressors is 20598.27kW/year, the energy consumed is 494358.30 Wh/year and the energy cost is approximately 642668.79lei/year.Conclusions: In conclusion, the chosen metering model provides precise data regarding the monitoring of the main parameters of industrial compressed air compressors so that the experimental data collected can be used in order to obtain a positive energy balance. Based on the results of this paper, further research can be done on the way compressors work, through which improvements in energy efficiency can be made, but also through which the compressed air production system can be sized more correctly in order to develop a particular saving solution of energy.

Keywords: Compressed air system, Smart meters, Energy savings, Industrial compressor, Electric energy

A MYTHICAL AND FOLKLORIC REPRESENTATION OF FEMININITY IN ION AGÂRBICEANU'S PROSE

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Background: Ion Agârbiceanu's prose is, for the most part, based on mythic-folkloric representations of some events rendered as if in an archetypal time, somewhere on the edge of the collision between the real and the fabulous plane, the one in which myths such as that of the *bathhouse* predominate, of the *undead*, of the *witch*, of *the flying* or *falling into hell*, of the *demon* or of various *spirits* and mythological beings found in Romanian folklor.This work captures the main poses of mythical femininity in the Agârbiceanu's prose, poses such as: that of the *undead woman*, a being considered to be evil due to her power of seduction and persuasion, the pose of the *volve woman*, symbol of the turbulent aquatic feminine, that of the *oracle-woman*, harbinger of inexplicable events; there are also exponents of the *demonic* and of *degrading adultery*, opposed to *angelic figures/devoted wives*, the pose of the *haunted woman*, the reproduction of *Mary Magdalene*, the biblical motif of repentance, the pose of the *devil child/wild devil*, *incarnated evil/"the sole of hell"*, the *Phoenix-woman*, and the list goes on. The hermeneutic approach, in this work, focuses on the ethno-folkloric and, at the same time, anthropological interpretation of several female characters consecrated in Ion Agârbiceanu's prose, from the perspective of analyzing the most relevant myths, signs, symbols and rituals specific to the Transylvanian collectivity at the beginning of the 20th century. Later, all these ancestral beliefs will be counterbalanced by the interference of existing modern elements, thus tracing the impact of the fusion of the two major influences, the old and the new, in shaping the female characters, a phenomenon that will inevitably lead to a desacralization and demystification of the mentality people had until then.

Keywords: mythic-folkloric representations, fabulous, myths, poses of mythical femininity, rituals

STUDY OF ARTIFICIAL INTELLIGENCE-BASED METHODS FOR PREDICTION OF ADVERSE DRUG REACTIONS

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Background: Adverse drug reactions (ADRs) encompass unexpected, painful, or dangerous effects resulting from drug consumption. These reactions, often due to overdoses or drug interactions, can lead to withdrawal from the market. This research aims to use artificial intelligence, in particular machine learning, to study prediction models already implemented for predicting certain types of adverse drug reactions. In pharmacology, there are several types of adverse reactions, from A to E, each taking into account certain mechanisms or moments in time. Pharmacovigilance, the science of detecting, evaluating, and preventing adverse effects, plays a crucial role in monitoring drug safety. Data acquisition involves utilizing databases like DrugBank, SIDER, KEGG, and Bio2RDF to gather information on drugs, adverse reactions, and genomic data. Research methodologies include multi-label learning frameworks, drug-ADR association networks, external link prediction methods, and knowledge graph embedding. The multi-label learning framework transforms the main problem into subsets of binary classification problems. The drug-ADR association network uses a bipartite network to represent associations between drugs and adverse drug reactions. The anticipated results involve the application of AI and machine learning models to predict adverse drug reactions, contributing to the development of efficient and innovative approaches in pharmacovigilance. The research emphasizes multiple algorithms used for predicting the adverse drug reactions.

Keywords: artificial intelligence, prediction, adverse drug reaction

THE WORK OF ALEXANDRU MACEDONSKI. PERENNIAL FORMS AND INNOVATIVE TRANSFORMATIONS OF DISCURSE REGISTER

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Background: The context and importance of Macedonski's work in Romanian literature He still continues to be considered one of the most influential and controversial Romanian poets and writers of the 19th and early 20th centuries. His works are characterized by strong images and expressive language. Strongly connoisseur of classical culture and literature he has made direct contact with it, having to leave our country because of the antidiastic poem *May 10*, "on the occasion of the anniversary of Prince Carol's enthronement." In fact, throughout the reign of Carol I, Macedonski became an open critic of the monarchy and used his own poetry to express his dissatisfaction.**Sarcastic spirit in his lyric** Macedonski frequently used sarcasm in his works, a literary technique through which he expressed his opinions, criticized society and expressed his irony to contemporary political rule. A notable example of such sarcasm is found in *Two francs*, a poem in which he shows his concerns for social and political issues. He mocks the desire for notoriety and superficiality of many contemporaries, suggesting that they do not focus on true literary or artistic creation, but rather on their personal image and fame. Sometimes expressing his disappointment at corruption and stagnation in Romanian society; had certain points of contact with Pasoptist concerns. **Bibliography Bibliography of the work** Macedonski, Alexandru, *Opere II, Poezii*, studiu introductiv, ediție îngrijită, note și variante, cronologie și bibliografie de Adrian Marino, Editura pentru literatură, București, 1966 Macedonski, Alexandru, *Rondeluri. Psalmi. Nopțile*, antologie și postfață de Ovidiu Ghidirmic, Editura Scrisul românesc, Craiova, 1975 **Primary critical bibliography** *Caiete macedonskiene*, vol. II, coordonator Ion Munteanu, Editura Eikon, București, 2020 Ciopraga, Constantin, *Literatura română între 1900 și 1918*, Editura Junimea, Iași, 1970 Marino, Adrian, V*iața lui Alexandru Macedonski*, Editura pentru literatură, București, 1966 Marino, Adrian, *Opera lui Alexandru Macedonski*, Editura pentru literatură, București, 1967

Keywords: dissatisfaction, antidinastic, disappointment, sarcasm

OBTAINING AN INNOVATIVE MATERIAL, STUDYING AND OPTIMIZING PERFORMANCE IN APPLICATIONS

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Background: Background presentation: Obtaining an innovative material, studying and optimizing performance in applications, is important for research, as it will be possible to eliminate 90% of metal and make it with environmentally friendly materials. The objective of this research is to explore the specialized literature and to find the current state of knowledge regarding the elements with which experiments have been tried to combine or wrap polyethylene and to be resistant to ultraviolet radiation so that it can also be used in open air surface not just underground in dark environments shielded from solar radiation. From the databases Scopus, web of science, etc. extract of works mainly from the last 10 years by keywords: polyethylene, UV resistance, coverings, economic impact, recycling Among the works that referred to the same aspect, I retained those with a greater degree of generality. In the end, we identified 150 works that fall within the objective of this research. The main aspects discovered refer to: 1. Early polyethylene 2. Substances used to combine or wrap polyethylene 3. The effects of ultraviolet radiation for each component 4. Applications in industry 5. The economic impact 6. Recycling We have concluded that the aspects related to low density polyethylene LDPE are not sufficiently researched, and less focused on the high density polyethylene used in pipes. Also shown are enough materials that use resins to combine with normal polyethylene, but very few metal-type substances.

Keywords: polyethylene, UV resistence, coating, economic impact, recycling

HEADING TO THE DIGITAL ZONE: DIGITALIZATION OF KEY PERFORMANCE INDICATORS (KPIS) IN AUTOMOTIVE INDUSTRY

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Background: As organizations go through digital transformations, the role and importance of key performance indicators (KPIs) is rapidly evolving. This article examines the intersection of digitalization and performance indicators, providing a nuanced examination of how the digital realm has reshaped the traditional understanding of KPIs. Through a mix of theoretical perspectives and real-world case studies, we explore the impact of digital technologies on the identification and interpretation of KPIs. The discussion encompasses the integration of advanced analytics and all the data in the KPI framework, highlighting the potential for decision-making and strategic planning. Furthermore, the article sheds light on the symbiotic relationship between digitization and KPIs in driving innovation and agility. It looks at the evolving nature of KPIs as dynamic indicators that adapt to changing business landscapes, providing valuable insight into the ongoing digitalization journey. We delve into the transformation of KPIs from static indicators to real-time, data-driven metrics, offering a closer look at how this evolution enhances operational efficiency, predictive maintenance, and overall performance in the automotive ecosystem. Through the digital transformation of Key Performance Indicators (KPIs) in the automotive sector, it was observed that real-time data analytics significantly improved operational efficiency, production and quality overall. The dynamic nature of KPIs, enabled by digitalization, allowed for a more agile response to changing conditions in the development of smart manufacturing processes. Digital KPIs enable predictive maintenance models, minimizing downtime and reducing the costs associated with reactive repairs. Proactive monitoring of production equipment leads to increased reliability, and a longer asset lifespan. All at once digital KPI's contribute to the optimization of resources in smart manufacturing practices. By analyzing the dynamic interplay between digitalization and KPIs in the automotive realm, this article aims to equip industry professionals, researchers, and decision-makers with a roadmap for effectively leveraging digital technologies to enhance performance metrics.

Keywords: digitalization, key performance indicator, productivity, automotive, improvement

OPTIMIZING PROTEIN STRUCTURE PREDICTIONS THROUGH GENETIC ALGORITHMS CONFORMATION ON LATTICE MODELS

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Background: This paper puts forward an Genetic Algorithm Conformations (GAC) to solve Protein structure prediction (PSP) problem on the hydrophobic-polar (HP) lattice model which formulates the structure prediction problem as a combinatorial optimization problem, where the number of hydrophobic residue-residue pairs is maximized. HP model is well studied simplified model of protein folding. The aim is to find the lowest energy structure by "folding" the protein chain on 2D or 3D lattice. The algorithm allows any conformation to appear into the populations at all the stages of GAC algorithm using invalid configurations to increase the chances to find good partial solutions. There are recent publications where DeepMind claims that its AlphaFold tool has been able to successfully predict the structure of almost all proteins known to science. Since last week, the Alphabet-owned artificial intelligence (AI) lab has made its database of more than 200 million proteins available to everyone for free. We state a new and efficient genetic algorithm for protein folding prediction, which instead of considering only the self-avoiding walk conformations (SAW), like classic genetic algorithms, allows any conformation to appear in populations at all stages.

Keywords: protein folding, protein structure prediction, genetic algorithm

MONITORING AND EVALUATION OF THE IAQ PARAMETERS BASED ON CORRECT CAPACITY ALLOCATION OF HVAC SYSTEMS AND IOT SENSORS BY REFERRING TO THE NORMS AND STANDARDS IN DOMAIN

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Background: In the past years, significant and impactful changes affected the population life quality. These changes are related to industry development, climate modifications, social and demographic scopes. Currently most of the people are working in offices, indoor spaces where the activity is focused on standing and performing different activities on the computer. Pandemic was a driver of these activities and showed us that what really matters is the quality of the indoor air. The objective of this research is to explore the literature and find the current state of knowledge on the topics related to HVAC systems and aspects related to monitoring and evaluation of the indoor air quality. From Semantic Schoolar database, MDPI, google scholar, researchgate I have extracted works mainly from the last 10 years by keywords: HVAC, IAQ, capacity, comfort, environment. Among the papers dealing with the same issue, I have selected those with a higher degree of generality. In the end I have identified a sum of papers which are referring to the objective of my research. The main aspects identified in those papers are related to: IAQ measurements in different environments, smart technologies used for measuring and control, placement and accuracy of sensors for air quality monitoring. I concluded that there is insufficient research on the following issues: placement, capacity and accuracy of sensors for monitoring of the humidity, air speed, temperature; cost differences between illness treatment and IAQ monitoring and controlling, correlation of the IAQ parameters results with the standards and norms.

Keywords: IAQ, comfort, environment, capacity, HVAC

REVIEW ON MULTIVARIATE TIME SERIES FORECASTING

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Background: The complex way in which technology can be integrated in the medical field is through the creation of diverse algorithms that can ensure the facilitation of processes that require decision support. Artificial intelligence (AI) has been considered a promising approach with possibilities of integration in several contexts. Multivariate time series forecasting consists in creating algorithms based on time series, in which several input data from different sources are provided. Time-series forecasting is the process of analyzing historical time-ordered data to forecast future data to evidentiate different points or events that are predicted to happen in future. It's used to solve problems that range from forecasting a company's sales for the next period of time. There are a multitude of types of algorithms that can be used to predict various pathologies in the orthopedic branch, Multi-Layer Perceptrons (MLPs) and Probabilistic Neural Networks (PNNs) were used to face the osteoporosis risk factor prediction. Concept based on time series was also used to predict the price of shares. The main objective of the research is to investigate and propose of innovative multivariate time series prognosis (MTSF) algorithms, which will be applied in the health and industrial fields. A subobjective of this research, in the context of research MTSF algorithms, is to generate relevant data using the appropriate existing technologies starting from the limited bits of data we already possess. References [1]. D. H. Mantzaris, G. C. Anastassopoulos and D. K. Lymberopoulos, "Medical disease prediction using Artificial Neural Networks," 2008 8th IEEE International Conference on BioInformatics and BioEngineering [2]. Xiang, ZL., Wang, R., Yu, XR. et al. Experimental analysis of similarity measurements for multivariate time series and its applicat [3]. Artemios-Anargyros Semenoglou, Evangelos Spiliotis, Vassilios Assimakopoulos, Data augmentation for univariate time series forecasting with neural networks, Pattern Recognition.

Keywords: Forecasting, Multivariate, algorithms

SOVIET ACTIVE MEASURES: A LESSON FROM HISTORY

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Background: Soviet active measures: a lesson from history Part of Russia's information warfare, active measures have been widely used since the Soviet era, then refined in the Cold War to justify Russia's geopolitical actions and interests, and now to legitimize the claimed great power status from Russian imperialism and a revisionist policy intensified since Vladimir Putin became president. Disinformation, propaganda, forgery, interference in the electoral processes of states seen as hostile, capture of elites, use of agents of influence are part of the active Soviet measures used to further the interests of the Russian government in diplomatic, political, economic, social or military terms. The key objective has remained to undermine citizens' confidence in democratic values, divide EU and NATO Member States, paralyse the decision-making process and discredit European institutions and elites. Approaching this phenomenon from a historical perspective could help to understand the reasons behind Russia's behaviour, which from a Western perspective seems irrational in relation to the rules governing the international order. From the Russian perspective, it is calculated, rational, based on a culture of risk, exercised by Russia throughout history as part of a strategic deterrence to secure Russian interests in the former post-Soviet states and as a form of reclaiming part of the legacy of Soviet foreign policy. The lesson that history teaches us is that in Russian strategic planning, the long-term perspective is the essential factor, an aspect often ignored by Western states, and the continuity and repeatability of active Soviet measures as a means of achieving Russian foreign policy objectives is likely to manifest itself in similar but also innovative ways, depending on events, opportunity and context, enhanced in the current context by technological development and social media.

Keywords: Active Measures, Russian disinformation, Russian propaganda, Russian foreign policy

THEATRE OF MIHAIL SEBASTIAN

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Background: Drd. Dana Maria Bendriş Titlul lucrare: Theatre of Mihail Sebastian. Fantasy, irony, humour. Abstract: In the horizon of the interwar theatre a relevant finality was represented by the involvement in the sphere of reality of the era, the perception of the real, the presence of anodyne characters. Sebastian`s irony and humour emerge from the impossibility of unfolding a love story, from the understanding the manias and tics of his characters, the frequent use of peroration, or emphasis on discrepancies between social classes. A controversial writer, Mihail Sebastian contributed to the renewal of the Romanian theatre, through the themes addressed, based on dream, reverie, and adventure, and through formulas, procedures and dramatic ways. In his plays one can notice motivations, aspirations, attitudes, values, a lifestyle and a way of behaving, the characters standing out through intuition and the ability to penetrate, to understand the human. A possible interpretation of the images of Sebastian's plays can be realized by appealing to the Phenomenological Psychoanalysis of the Elements promoted by Gaston Bachelard, who underlines that the artistic image emerges from the depths of the human beings, from the substrates of creativity (where they are found together, vague, undetermined, phantasms, archetypes, formative obsessions of the human being etc.). In the dramaturgy of Sebastian one can distinguish a realism of perception, determined by the constant search for truth, from the perspective of knowing the world, to which are added the lyricism of the ambience, fantasy, and irony as privileged dramatical ways. Keywords: Fantasy, irony, humour. **Material and methods:** - **Results:** - **Conclusions:** -

Keywords: Fantasy, Irony, Humour

HIGH-PERFORMANCE COATINGS APPLIED TO MATERIALS EXPOSED TO THERMAL STRESS IN ADVANCED APPLICATIONS: AN OVERVIEW.

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Background: The employment of Thermal Barrier Coatings (TBCs) in aerospace, automotive, and energy industries addresses the demanding requirements of harsh working environments. While superalloys used are resilient to extreme temperatures, wear, and corrosion, sometimes they may reach their limits in advanced applications. To overcome these limitations and optimize performances, TBCs, with a low thermal conductivity ceramic layer, are used. These TBCs significantly reduce surface temperatures, enhancing system durability and efficiency in extreme conditions. The aim of this research is to analyze and synthesize specialized literature to provide a comprehensive perspective on the state of the art in the field of thermal barrier coatings. Using databases such as ResearchGate, Scopus, etc., predominantly recent studies from the last 10 years have been identified through keyword searches, including terms such as: thermal barrier coating, thermal conductivity, ceramic coating, thermal oxidation, etc. Among the identified papers, the most relevant ones have been selected, providing fundamental insights into the development of TBCs. A total of 150 papers that align with the research objective have been selected. The information has been grouped into three main study chapters: A.Applications of TBCs; B.Materials for TBCs; C.Methods for coating manufacturing. Based on these, a collection of necessary information has been assembled in order to initiate experimental studies. Following the analysis of the papers, it has been concluded that improvement of the characteristics of TBCs can be achieved by varying the concentration of elements used in various coatings or by introducing new elements or chemical compounds. A research directive could involve a deeper investigation of La2Hf2O7 as a top coat material for applications in gas turbines and internal combustion engines, manufactured using Air Plasma Spray, Electron Beam Physical Vapor Deposition, and Suspension Plasma Spray techniques. Additionally, it is necessary to identify collaborations that facilitate experimental studies and assess the associated costs.

Keywords: thermal barrier coating, coating manufacturing, yttria stabilized zirconia, thermal conductivity, gas turbines

ARTIFICIAL INTELLIGENCE BASED PREDICTION IN HEALTHCARE

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Background: Using methods based on machine learning (ML) for solving diverse types of prediction problems can help the healthcare to be more efficient and effective, while assuring personalized treatments and support intelligent decisions in the diagnostics elaborations. Machine learning algorithms for prediction can help to make preventive care strategies with informed decision-making. Important research topic in healthcare is the prediction of patient's health information (TA), which is based on actual available health-related data like, symptoms, syndromes, and laboratory analysis results. Methods applied for TA solving have limitations, in demanding situations, like limited data, missing data, existence of outliers and influential points, and unbalanced data. For TA I intend to propose new prediction algorithms able to manage such demanding situations. They will be compared with representative algorithms like SVM, logistic regression, kNN, classification Tree, and Naïve Bayes. Some of the proposed algorithms will incorporate data augmentation techniques like bootstrapping to improve the training dataset. The applicability in medicine will be finally tested, on data from the medical field.[1] Ma, F., You, Q., Xiao, H., Chitta, R., Zhou, J., & Gao, J. KAME: Knowledge-Based Attention Model for Diagnosis Prediction in Healthcare. Association for Computing Machinery (2018). [2] Ozcan, M., & Peker, S. A classification and regression tree algorithm for heart disease modeling and prediction. Healthcare Analytics, 3, 100130. (2023). [3] Jackins, V., Vimal, S., Kaliappan, M. et al. AI-based smart prediction of clinical disease using random forest classifier and Naive Bayes. J Supercomput 77, 5198-5219 (2021).[4] Shakeel, P.M., Tolba, A., Al-Makhadmeh, Z. et al. Automatic detection of lung cancer from biomedical data set using discrete AdaBoost optimized ensemble learning generalized neural networks. Neural Comput & Applic 32, 777-790 (2020). [5] Jain, D., & Singh, V. Feature selection and classification systems for chronic disease prediction: A review.Egyptian Informatics Journal, 19(3), 179-189 (2018).

Keywords: machine learning, prediction, health science

SUPERVISED LEARNING PARADIGMS IN PHARMACEUTICAL SCIENCES: A REVIEW ON DRUG-DRUG INTERACTION AND DRUG DESIGN

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Background: This research is primarily motivated by the need to advance significantly in the field of the new drug discovery field and the prediction of drug-drug interactions (DDIs), with the goal of enhancing drug efficacy[2] when using multiple medications in patient's treatment. Innovative computational approaches, primarily rooted in artificial intelligence, often leveraging machine learning and deep learning techniques, and utilizing various drug-related factors such as genes, protein bindings, drug side effects, molecular structures, enzymes, and more, offer a cost-effective alternative to traditional in-vitro experiments by reducing the number of required experiments. This article offers a comprehensive review summary of cutting-edge research pertaining to supervised learning (SL) in the context of DDIs, the pharmaceutical industry's new drug discovery sector, and drug design. The overall objective is to identify the most effective methods for making highly accurate predictions for administering treatments with minimal or no risk of adverse reactions. It was determined that backpropagation neural networks exhibit exceptional efficiency, with further enhancements in prediction accuracy achieved through hybridization with other techniques. Additionally, in the realm of molecular modeling, multilayer perceptron networks demonstrated promising results for predictive purposes.

Keywords: Supervised Learning in Pharmacology, Intelligent Clinical Decision Support Systems (i-C, Drug-drug interaction (DDI), Machine Learning Techniques, Prediction of Synergistic Drug Combinations using

ANOMALY DETECTION IN AUTONOMOUS SYSTEMS

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Background: In autonomous systems such as unmanned aerial vehicles (UAVs) and autonomous vehicles, the interaction between the environment and the system is crucial. Sensors translate environmental characteristics into data, which the system's actuators use to react. However, environmental changes can affect sensor sensitivity, potentially causing breakdowns and introducing safety risks. Failure to adapt to these factors can produce safety risks known as safety of the intended functionality (SOTIF). Sensor malfunctions or design deficiencies can generate SOTIF but also functional safety risks. Different countermeasures are needed for different causes of sensor failure, including strategies for dealing with faults or design deficiencies in sensors. Signal denoising and data fusion can help manage uncertainty. Despite the existence of many sensor anomaly techniques, many alternatives remain unexplored. For instance, model-based methods or combinations of different methods can enhance cross-sensitive parameters in a sensor array to detect anomalies. Data consistency checking algorithms can identify and isolate failed sensors. Encoded data can be interpreted by clustering algorithms, and sensor state estimation can be evaluated by transition probabilistic models like Hidden Markov Models (HMM). Other methods have developed an attention mechanism to identify sensor-related anomalies in Generative Adversarial Network (GAN) architectures. Sensor fault detection and diagnosis can be achieved using a combination of autoencoder and classification algorithms (LSTM and DBN). Present work addresses environmental uncertainty using signal denoising and multiple sensor fusion methods. It also includes sensor anomaly detection using prior knowledge from the sensor's own data and possible redundant information from other sensors. Real datasets provided by researchers in the domain (IMU, LIDAR, Radar, simulated or real) are used. Furthermore, contextual anomaly interpretation is added to increase the model's reliability and credibility for use in risk-prone environments.

Keywords: Autonomous systems, Sensor malfunctions, Signal denoising, Data fusion, Environmental uncertainty

BYMODAL DISCOURSE ANALYSIS OF COSMETIC ADVERTISING: INTERWEAVING LINGUISTIC AND VISUAL STRATEGIES IN PERSUASIVE COMMUNICATION

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Background: The current state of knowledge in the field of cosmetic advertising recognizes the potency of both linguistic and visual elements. However, this study aims to explore the nuanced ways in which these modalities collaboratively shape persuasive discourse in the cosmetic industry. The study contributes not only insights into linguistic and visual strategies but also a methodological solution that enhances the depth of analysis. By embracing BDA in this research, the authors aspire to elevate the effectiveness of communication strategies in the cosmetic industry, fostering a more nuanced and culturally resonant approach to persuasive discourse. The structured methodology of BDA offers a way to decode and analyze the multimodal communication strategies used in cosmetic advertisements. This study not only offers a deeper understanding of the persuasive power of cosmetic products, but also a solution that enhances the depth of analysis and empowers scholars and practitioners to navigate the evolving landscape of cosmetic advertising. In summary, this study offers insights into the linguistic and visual strategies used in cosmetic advertising and a structured methodology to analyze the interplay between these modalities. By embracing BDA, the authors aim to enhance the effectiveness of communication strategies in the cosmetic industry and foster a more nuanced and culturally resonant approach to persuasive discourse.

Keywords: bymodalitydiscourse, cosmeticadvertising, communication, linguistics, persuasive

SOCIAL SCIENCES

WOMEN'S JOURNEY THROUGH COMMUNISM

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Background: The female experience ran into multiple prejudices, which slowed down its affirmation both in the Romanian literary space and in other fields of activity. The aim of relationships of any kind was a limiting one, demonstrating the hidden meanings of an illusory equality between the sexes. Therefore, limitation, self-censorship, repression represent the main coordinates inscribed in the profile of the female writer for whom literature does not represent freedom of expression, but another limitation of the creative act. Starting from the inhibiting action of the Romanian communist regime, we will discover the causes of the absence of women in the Romanian literary field before 1989, focusing on the consequences of oppressed sexuality, imposed motherhood and the institution of marriage seen as a mandatory requirement. **Material and methods:** Therefore, limitation, self-censorship, repression represent the main coordinates inscribed in the profile of the female writer for whom literature does not represent freedom of expression, but another limitation of the creative act. We will discuss and analyze aspects regarding oppressed sexuality, imposed motherhood and the institution of marriage, worthy of the highest form of respect. Starting from the inhibiting action of the Romanian communist regime, we will discover the causes of the absence of women in the Romanian literary field before 1989.

Keywords: women, absence, inequality, self-censorship, repression

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VALERIU LITERAT'S LIFE IN COMMUNIST ROMANIA THE REPRESSION

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Background: **Valeriu Literat's life in communist Romania The repression Abstract.**This article will be part of the chapter of the doctoral thesis dedicated to the difficult years in the life of the retired teacher Valeriu Literat who in his old age was persecuted by the new socio-political order. The Soviet threat led Romania to enter into an alliance with Hitler's Germany between September 6, 1940 and August 23, 1944. However, Romania lost Bessarabia and Bucovina to the Soviet Union at the end of June 1940 and following the Second Vienna Award northern Transylvania to Hungary. Communism was rejected in all the villages of the Land of Făgăraş. The inhabitants of these villages preferred investigations, torture and detention instead of the mirage proposed by the communist doctrine.After 1947, the young people from Făgăraş were convinced anti-communists, many of them were part of the anti-communist movement of fighters from the mountains of Făgăraş, some of them died in communist prisons while others died in direct fights with the Security. In every locality there were people who were fighters of the resistance, but there were also traitors. The relatives or friends of those in the resistance were permanently stigmatized and pursued by the Security. The children of prisoners could hardly complete their schooling because they did not have a "clean" record, being children of "bandits" or political prisoners. On April 5, 1951, the day Valeriu Literat turned 66, he was imprisoned in the penitentiary in Sibiu. Having the registration number 390/April 5, 1951 drawn up in the penal record of the Security in Sibiu, he began his detention period on August 10, 1951 according to the Order 2773/1951 and the Decision of the M.A.I. 332/31.VII.1951.

Keywords: sovietization, detention, repression, Valeriu Literat, nationalization

THE IMAGE OF THE TURK IN HUNGARIAN LITERARY AND RELIGIOUS SOURCES OF THE 16TH CENTURY

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Background: The 16th century was highly challenging for Europeans as far as the Ottoman peril was concerned because it is the century of the maximum rise and expansion of the Ottoman Empire. The first clash of civilizations takes place, and it is interesting to follow how the image of the Turk is constructed, depending on the region and status of the conquered land. The Battle of Mohács is a turning point not only in the history of Hungary, but also in the history of Europe. The main consequence of the battle was the partition of Hungary, which was a great blow given to this kingdom and to Hungarian consciousness. It is in this context that the image of the Turk is created, through various means such as literary writings and religious writings. Whether religious or literary, what we have is an aesthetic of guilt that offers us a picture of how the Turk was perceived by the contemporaries of the events. Sin and punishment are the key words as far as the image of the Turk is concerned. Thus, these written sources prove to be valuable to the 21st century historians who try to rebuild the image of the Turk in the region mentioned above.

Keywords: Europe, Christianity, Islam, Hungary, Ottoman

AN IMAGOLOGICAL PERSPECTIVE ON THE IMMIGRANT

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Background: The paper briefly outlines the context of the migration phenomenon, particularly how this phenomenon has been reflected in contemporary prose.The impossibility of reclaiming one's identity in an unfamiliar cultural and the manner in which the consequences of such a widespread phenomenon have manifested on both the individual and the community have been themes of interest in the prose writings of contemporary authors, including Dan Lungu. Literature represents a means by which this phenomenon of migration is brought to the attention of the romanian reader. At the end of the 19th century, the American cultural space is revealed to us through translations. In prose, identity can be found as a theme that guides the entire process of creating the literary universe. Identity functions as a sign attributed to a referent, a character, and through the created literary universe, through the author's vision of the phenomenon, the individual goes through different "stages" that shape their identity, emphasizing its dramatic nature and conferring authenticity. The literary texts under consideration are studied from the perspective of the three fundamental elements: identity - belonging - otherness. For an imagology of the stranger, we will consider the prose of Dan Lungu, specifically two of his novels: "The Girl Playing God" and "I Am an Old Communist Hag!". The novels under discussion shape, through a play of perspectives, the image of the Romanian migrant in the post-communist period. The perception of the Romanian by those outside the Romanian space is illustrated through suggestive narrative sequences that place the character in various situations with the aim of highlighting their thoughts, experiences, states, and feelings. The identity drama is often caused either by the impossibility of belonging and identifying with a new community/mentality or by the rupture that occurs between the individual and the community to which they initially belonged.

Keywords: immigrant, imagology, identity, Dan Lungu

PETRU CIMPOEȘU. THE STORY THAT GIVES CHAOS MEANING

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Background: Through the novel "Firesc", Petru Cimpoeșu illustrates the symbiosis in which man lives with the chaos in his life, as if such an existence were natural. Young Iunia Poenaru tries to give coherence to her life, clumsily creating a diary in which words fail to capture the depth of the idea. In an abject environment and against the background of a broken family, Iunia does not have the ability to find her way, but the process of writing, initiated by chance, gives her an unexpected power to write the story, which, in the end, provides a form of coherence to chance.

Keywords: story, diary, words, chaos, coherence

THE PREMISES OF THE LITTLE UNION SEEN FROM THE PERSPECTIVE OF BRITISH AND ITALIAN DIPLOMATIC DOCUMENTS

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Background: The idea of uniting the Romanian Principalities is based on the premise of the unity of the Romanian people. Even though this desire existed long before 1848, the Pasoptista revolutionaries made a goal of this desire and put it down on paper. Revolutionary programmes such as the "Petition-Proclamation" or the "Proclamation of Izlaz" played an important role for the future of the Romanian Principalities. Situated at the crossroads of three powerful states, the Romanian Principalities were, over time, a theatre of conflict for the Great Powers. After the suppression of the 1848 Revolution in the Principalities, the Romanian revolutionaries, who had gone into exile in Europe, continued to campaign for social, administrative, political, economic and cultural reforms and for the principle of national sovereignty. Thus, at the Paris Peace Congress, the Romanian problem was raised to the level of an international issue, demanding the attention and energy of the main political players.The decisions taken by the Great Powers at the Paris Peace Congress in 1856 influenced the path of the Principalities towards union. As a result, Russia's protectorate over the Principalities was abolished and Ad-hoc Assemblies were set up to consult the Romanians on their desire to unite into a single state. The result of these assemblies led the Great Powers to decide at the Paris Convention in 1858 to create the "United Principalities of Moldavia and Wallachia", each of which would have a Romanian prince, a legislative assembly and a separate capital. At the same time, this period reveals an oscillation in England's policy towards the Principalities. While Italy was in favour of the union proposed by the Paris Convention, England wanted to preserve the territorial integrity of the Ottoman Empire and demand a barrier against Russian expansion.

Keywords: England, Italy, The Little Union, diplomatic documents

TRANSITIONAL JUSTICE IN THE WESTERN BALKANS – MUCH NEEDED LEGAL ACTION OR DISGUISED RETRIBUTION?

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Background: Almost thirty years have passed since the bloody conflict in Yugoslavia came to an end. Yet, the collective trauma and the devastating memory of children, sisters or parents who were brutally murdered, raped or tortured, still haunts the survivors. Under these circumstances, both the prosecutors and the domestic courts of Serbia and Bosnia and Hercegovina, are making efforts to bring to justice the people involved in perpetrating war crimes, genocide or crimes against humanity. However, such action isnot easy. Nationalism is still high and both parties stick to the memory of those they perceive as national heroes.The issue is thatmost of the time, those "national heroes" are regarded as war criminals by the other side.This paper aims to analyse two such cases.The first one is concerning Naser Orić, a former Bosnian military commander in Srebrenica, whose acquittal raised serious discontentamong the Serbian community. The second case is referring to Edin Vranj, a former Bosnian police officer. He was arrested by the Serbian authorities, despite the fact Serbia transferred the investigation of his case to the Bosnian prosecution office.

Keywords: Transitional justice, Srebrenica, Nationalism, Bosnian War, National Heroes

SUSTAINABILITY – A CURRENT BUSINESS MODEL FOR TRANSNATIONAL SOCIETIES

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Background: At transnationals, sustainability has become a key element with respect to their future. Sustainability refers to a different approach the management of companies by developing strategies, which are efficient from the social, ecologic and economic standpoints. **Material and methods:** In this process, data and databases of both international corporations and international institutions will be used. **Results:** Environmental sustainability can be improved and we can observe that more and more companies are becoming models in reducing carbon imprint. **Conclusions:** Through social responsibility, efforts at improving good practice in communities in which transnational societies function can be introduced. The essential economic standpoint is that all legal rules must be respected and accounting practices should be transparent and correct.

Keywords: Transnationals, Sustainabiliy, Social Responsibility

THE INTERNATIONAL CONFERENCE OF PHD STUDENTS AND YOUNG DOCTORS

DIGITAL THINSPIRATION: SOCIAL MEDIA'S HIDDEN IMPACT ON EATING DISORDERS

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Background: In recent years, social media has emerged as an essential form of communication used by contemporary society. Social media platforms have played a crucial role in promoting interpersonal relationships and facilitating the dissemination of information. However, recent studies have brought attention to the possibility of perceiving social media from a negative perspective. The prevalence of eating disorders, particularly among young individuals, is significantly influenced by the extensive use of social media platforms. The repeated exposure to carefully selected photos, unachievable ideals of beauty, and prevalent trends in weight reduction on these platforms might potentially foster negative body image and promote dangerous eating habits. This study examines the widespread impact of social media on body image and eating habits. It delves into the dangerous phenomena of 'thinspiration' observed in online communities and its significant impact on people who are susceptible to developing eating disorders. It provides insights into the hidden dangers of digital content and offers a critical perspective on the need for responsible online engagement.

Keywords: eating disorders, beauty ideals, social media, thinspiration, negative body image

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