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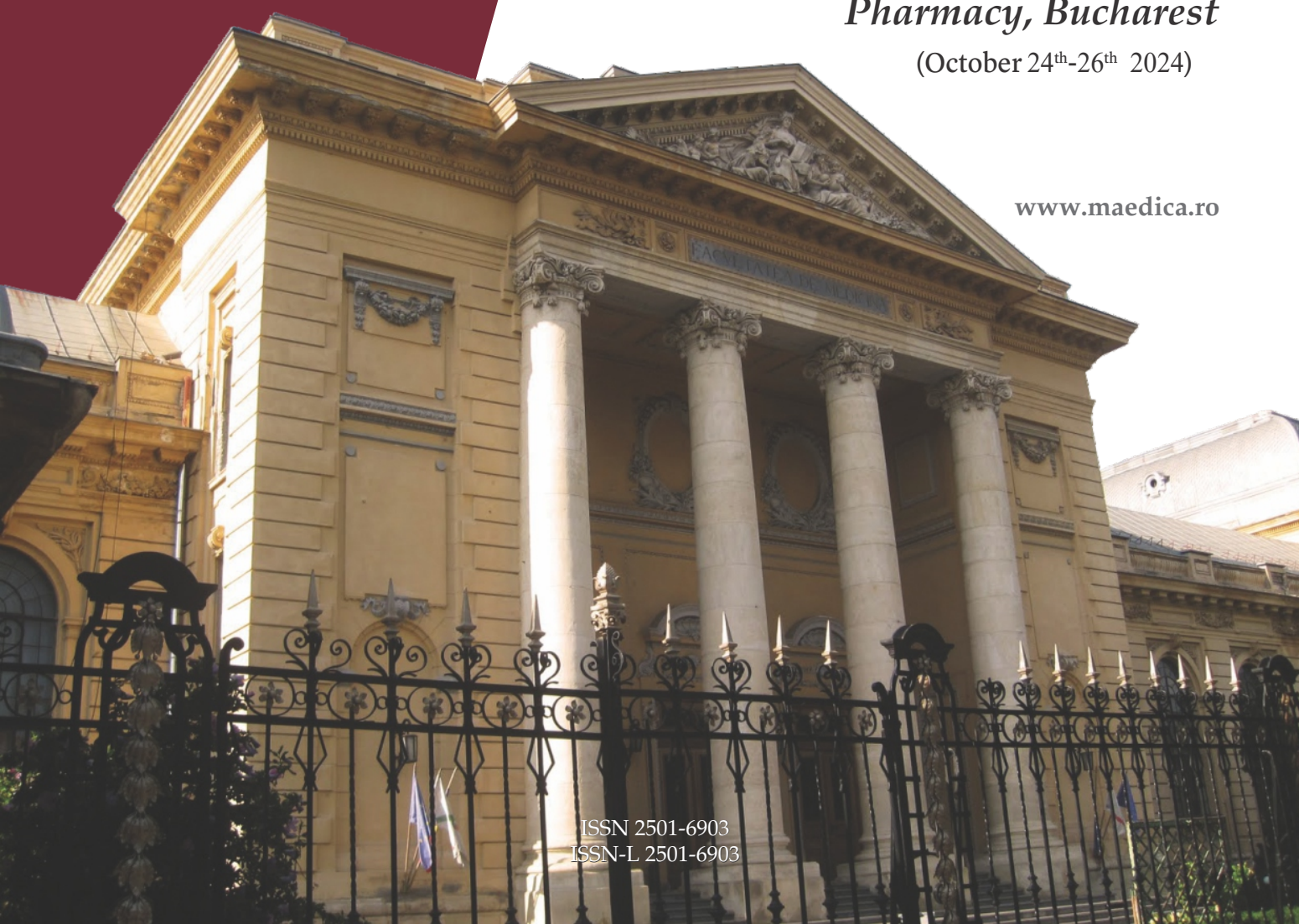

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ID836 Assessing the Impact of a Digital Mobile Application on Children's Adherence to Dental Brushing: a Questionnaire-Based Analysis

Eliza Denisa Sgiea[1], Tamara Mihut[1], Corina Marilena Cristache[1]

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Objectives: Early dental education and proper brushing are essential for children's oral health. This study investigates the enhancement of children's compliance with dental brushing through the evaluation of a digital educational application, using questionnaires and plaque index as objective measures of the technology's effectiveness.

Methods: The study enrolled 30 children (ages 6 to 12) whose parents provided informed consent. Participants were given access to a digital brushing application. The application, featuring the character Sparkly, connected via Bluetooth to a mobile phone, teaches correct brushing techniques through animations and engaging rewards designed to help establish a routine. The integrated timer, with a 2-minute countdown and 30-second interval indicators, encourages adherence to brushing time, while the rapid brushing action ensures effective cleaning. Participants were initially assessed using plaque index indicators and a parental questionnaire to establish baseline knowledge and oral hygiene practices. After a 4-week period of application use, the assessments were repeated to evaluate the application's impact on brushing habits.

Results: Analysis of pre- and post-use questionnaires revealed significant improvements in brushing techniques and general oral hygiene knowledge. Children reported increased brushing frequency and a better understanding of its importance. 98% of parents indicated that the application motivated their children to brush better and for longer periods. There was a statistically significant reduction in plaque index scores.

Conclusions: The use of the digital brushing application proved to be an effective method for improving oral hygiene. The real-time feedback and interactivity of the application significantly contributed to the development of healthy dental habits. Broad implementation of such technologies could transform pediatric dental education, making it more engaging and effective. This study suggests that digitalization of children's oral hygiene programs could lead to long-term positive outcomes.

ID877 Effects of Monolithic Zirconia Surface Treatments on the Biological Behaviour of Human Gingival Fibroblasts

Mihaela Pantea[1], Andreea Maria Taerel[1], Alexandra Ripszki Totan[1], Bianca Voicu Balasea[1], Andrei Serban[1], Ana Maria Tancu[1], Lucian Toma Ciocan, Andreea Cristiana Didilescu[1], Silviu Mirel Pituru[1], Marina Imre[1]

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Objectives: The aim of this study was to evaluate the influence that certain surface treatments of monolithic zirconia have on human gingival fibroblasts, specifically on cell viability, nitric oxide (NO) and lactate dehydrogenase (LDH) levels.

Materials and methods: Cylindrical samples (Φ/h=10/2mm) of sintered monolithic zirconia (n=36) (Katana™ Zirconia STML, Kuraray Noritake Dental Inc., Tokyo, Japan) and titanium alloy samples (n=9) (Starbond Ti5 Disc, Scheftner Dental Alloys GmbH, Mainz, Germany) were manufactured using CAD/CAM technology. The zirconia samples were divided into four groups, based on the performed surface interventions: no interventions (group 1), sandblasting (group 2), polishing (group 3), polishing and glazing (group 4). In this study, the HFIB-G cell line (human gingival fibroblasts) from Provitro GmbH (Berlin, Germany) was used. After 24 and 48 hours of incubating the fibroblasts with the dental materials, the following experimental tests were conducted: MTT assay (cell viability assessment), Griess test (NO concentration analysis), and LDH test (LDH level assessment). The control group consisted of cells not exposed to dental materials.

Results: At 24 hours of exposure, the cell viability levels, reported as a percentage compared to the control group, were as follows: 91.28% for titanium alloy; 86.92% for group 3/polished zirconia; 82.38% - for group 1/sintered zirconia; 80.58% for group 4/glazed zirconia; 80.31% for group 2/sandblasted zirconia. After 48 hours, the lowest level of cell viability was recorded in group 3, with a decrease of approximately 25%, compared to the control group. The NO and LDH levels at 24 and 48 hours indicated that there were no significant changes compared to the control group.

Conclusions: The tested materials are not considered potentially cytotoxic, according to the ISO 10993-1:2018 standard; furthermore, these materials do not have a potential inflammatory effect (as indicated by the recorded NO levels) and do not adversely affect LDH levels.

ID894 Investigation of Potentially Pathogenic Bacteria In Nasal, Pharyngeal And Hand Swab Samples From Healthy Dental Students

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Objective: The aim of the study was to investigate potentially pathogenic bacteria in swab samples collected from the nose, pharynx and hand of second year students of the Faculty of Dentistry, "Carol Davila" University of Medicine and Pharmacy (UMFCD) - Bucharest.

Methods: Swab samples from the nose, pharynx and dominant hand were collected from 80 students, in June 2023. Samples were cultured for bacteria on non-selective media: Columbia Blood Agar and Mueller-Hinton Chocolate Agar (Liofilchem, Italy) and some selective media. Isolates were identified to genus/species level by conventional methods and API systems (BioMeriéux, France).

Results: The potentially pathogenic isolates were: Staphylococcus aureus (4 strains from the hand, 12 nasal strains and 13 pharyngeal strains, of which only one was methicillin-resistant, MRSA), Streptococcus pneumoniae (1 nasal strain), Enterococcus faecalis (1 strain from the hand), Moraxella catarrhalis (2 nasal and 2 pharyngeal strains), Haemophilus parainfluenzae (3 nasal and 3 pharyngeal strains), Klebsiella (3 nasal and 2 pharyngeal strains, and 1 strain from the hand), Enterobacter (2 strains from the hand), Proteus (1 strain from the hand) and Pseudomonas stutzeri (2 strains from the hand). Five students showed double carriage of S. aureus as follows: nasal + pharyngeal carriage (3 students), nasal + hand carriage (1 student) and pharyngeal + hand carriage (1 student), but with different strains.

Conclusion: In this group of students, 30% were carriers of S. aureus, but only one student of MRSA. Other potentially pathogenic bacteria (enterococci, pneumococci, M. catarrhalis, Haemophilus, Pseudomonas and members of Enterobacteriaceae) were isolated from 26.25% students. Dental students should be made aware of the risk of cross-infection in dental units as early as the pre-clinical years.

Acknowledgments: This study is part of an undergraduate thesis conducted within the Department of Microbiology of the Faculty of Dentistry, to be defended at UMFCD-Bucharest, in September 2024.

ID937 Assessment of the Awareness Level Regarding Periodontal Disease Among a Group of Patients with Diabetes Mellitus

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Aim: Asssessment of the diabetes patients' attitude and knowledge regarding periodontal health.

Materials and methods: The study was conducted in April-May 2024 on a group of 100 Romanian patients with diabetes mellitus, with a mean age of 58.43 ± 15.91 years, 50% females, 65% urban area residents. The assessment was performed using a 23-item questionnaire.

Results: Regarding the self-assessed level of knowledge regarding the association between diabetes and periodontal disease, 31% consider themselves inadequately informed and 34% uninformed.

With respect to the attitude on the association between diabetes mellitus and periodontitis, 61% of the participants are aware of the effect of periodontal diseases on the evolution of diabetes and only 50% acknowledge the positive effect of periodontal treatment on the evolution of diabetes.

On the other hand, only 34% are aware of the effect of diabetes on the debut of periodontal inflammation and 26% on the increased inflammatory response specific for periodontitis.

When it comes to the dental attendance, 54% had a dental check-up after the diagnosis of diabetes, 44% of the participants received from the diabetes specialist a recommendation for a dental evaluation while 36% for a specific periodontal evaluation.

Conclusion: In the studied group, there was a lack of awareness and an insufficient knowledge regarding the association of diabetes mellitus and periodontal disease.

ID939 Digitalization Limits in Single Lateral Dental Restorations

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Traditionally, dental restorations were produced through elastic impressions made by dentist, then the dental technicians were pouring the models, made the wax pattern and finally cast/heat press or bake the final crown. All these steps are time-consuming and not 100% accurate.

The current digital transformations means that dentists use intraoral scanning for impressions and dental technicians make restorations through CAD-CAM (computer aided design/computer aided manufacturing) which reduces the production process steps. This change was possible only with the evolution of dental materials.

The aim of the study is to determine the limits of digital crowns from dentists, dental technicians and patients' point of view.

Methods: A case report based on a comprehensive questionnaire designed to gather feedback from 5 dentists and their dental technician teams about the treatment of random 50 patients with 50 zirconia lateral digital crowns.

Results: Dentists and dental technicians need additional proper training in the use of intraoral/extraoral scanning of impressions and CAD/CAM technology; the learning curve is different from person to person. Patients have only great benefits: high accuracy, less time consuming.

Conclusions: Dentistry is increasingly adopting digital treatment modalities, which represent a significant transformation. The major change is related to processing stages, but the dentist and the dental technicians are still very important regarding the design and the adjustments of restorations. Single and simple restoration cases can use a fully digitized CAD/CAM system.

ID806 Phytochemical Profile and Antioxidant Activity of Some Widely Consumed Edible Mushrooms

Teodora Deculescu-Ionita[1], Ligia Elena Dutu[1], Maria Lidia Popescu[1], Liliana Popescu[1], Emanuela-Alice Luta[1], Elena Iuliana Ilie[1], Cerasela Elena Gird[1]

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Introduction: For the last decades, mushrooms have been used both as food and medicine. Mushrooms contain a great variety of biological compounds with a wide range of therapeutic effects. Objectives. The aim of our study was the phytochemical screening and the evaluation of antioxidant capacity of Hypsizygus tessellates (Bull.) Singer (shimeji/white beech mushroom), Tremella fuciformis Berk. (silver ear fungus) and Auricularia polytricha Fr. (ear fungus).

Materials and methods: The material consisted in fresh (white beech) and air dried (silver ear and ear fungus) mushrooms, acquired from a local supermarket, in Bucharest, in 2019. The phytochemical screening was determined based on qualitative (specific chemical reactions and thin layer chromatography) and quantitative analysis (spectrophotometric/gravimetric determination of the total phenolic, free sterols, polysaccharides contents). The antioxidant activity was determined based on the scavenger capacity towards 2,2-diphenyl-1-picryl hydrazyl free radical and ferric reducing power assays.

Results: TLC analysis revealed the presence of ergosterol for all analyzed mushrooms. Regarding the quantitative assays, the highest total phenolic content was observed for white beech mushroom (0.65 g%), while free sterols highest value was determined for Tremella fuciformis Berk. (0.27 g%). According to our results, shimeji had the highest amount of polysaccharides (4.48 g%). The best antioxidant activity was observed for white beech mushroom, in correlation with the highest phenolic content.

Conclusions: Analyzed mushrooms are an important source of bioactive compounds with antioxidant activity. Our preliminary results are valuable in order to obtain dry extracts, that will be further analyzed (in vitro and in vivo) for their antioxidant activity, regarding their beneficial role for metabolic or cardiovascular diseases treatment, for which oxidative stress is a key factor.

ID811 Phytotherapy in the Management of Premenstrual Syndrome

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Introduction: Premenstrual syndrome is not a disease. It includes some somatic, cognitive and behavioral symptoms, on which woman usually experiences them up to about 14 days before menstruation. Anxiety / depression, nervousness, headache, poor concentration, increased appetite, bloating and nausea are the typical symptoms. The syndrome affects about 90 per cent of women in reproductive age, but only about 10 per cent of them have a significantly debilitating form. According to medical data, phytotherapy can provide viable solutions, some of these symptoms can be improved or even eradicated by herbal preparations.

Objectives: Current research aims to evaluate the level of knowledge and use of herbals in the management of premenstrual syndrome.

Method: A questionnaire was created and distributed online.

Results: 381 responses were received, most of the respondents are woman, over 18 years old, and with various levels of education. In premenstrual period they use medicines, usually AINS, and only a few of them use phytopreparations. Raspberry shoots (Rubi-ideae folium), castle tree / monk's pepper (Agni castici fructus), zingiber (Zingiberis rhizoma), yarrow (Milefolii herba) are the best known and most used herbals. The phytopreparations were recommended by a doctor or a pharmacist.

Conclusion: The pharmacist and the doctor must be more actively involved in the management of premenstrual syndrome, by also including phytopreparations in the treatment (where applicable).

ID820 Synthesis, Characterization and in Silico Admet Profiling of Novel Thiophene-2-Carboxamide Derivatives

Carmellina Daniela Badiceanu[1], Carmen Limban[1], Constantin Draghici[1], Ruxandra-Nicoleta Juganaru-Badescu[1], Alessandra-Catalina Smarandache[1], Diana Camelia Nuta[1]

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Objective: The pharmaceutical research continues the discovery process of finding more powerful drugs, considering factors such as the drug's molecular size, affinity for its target, and drug bio-activation and metabolization.The aim of this study was to create novel molecules belonging to the N-substituted (carbamothyoil) thiophen-2-carboxamide class, which possess therapeutic potential.

Materials and methods: The new compounds with thiourea skeleton, were prepared from 2-thiophenecarboxilic acid which was refluxed with thionyl chloride in anhydrous 1,2-dichloroethane. The resulting 2-thiophenecarbonyl chloride was treated with ammonium thiocyanate by refluxing in acetone, to obtaine 2-thenoyl-isothiocyanate. The new compounds were synthesized in situ from the isothiocyanate and primary amines.

For their ADMET properties, the compounds have been comprehensively studied in silico, in order to evaluate its therapeutic and toxicological profiles.

New compounds containing the thiourea skeleton were synthesized through a series of chemical reactions. First, 2-thiophenecarboxylic acid was refluxed with thionyl chloride in anhydrous 1,2-dichloroethane, resulting in the formation of 2-thiophenecarbonyl chloride. Next, this compound was treated with ammonium thiocyanate in acetone under reflux conditions, leading to the formation of 2-thenoyl-isothiocyanate.

The synthesis of the new compounds took place in situ by reacting the isothiocyanate with primary amines. To assess their ADMET (Absorption, Distribution, Metabolism, Excretion, and Toxicity) properties, the compounds underwent comprehensive in silico studies. These studies aimed to evaluate the therapeutic and toxicological profiles of the newly synthesized compounds.

Results: In this study, we successfully synthesized and characterized N-substituted (carbamothyoil)thiophen-2-carboxamides, which represents a novel class of molecules with potential therapeutic applications. The confirmation of the synthesis was achieved through nuclear magnetic resonance and infrared spectroscopy, while the physical properties, such as melting point and solubility, were used to further characterize the compounds. All spectroscopic data provided strong evidence supporting the structures of the newly synthesized compounds.

Remarkably, a comprehensive evaluation of the physicochemical, pharmacological, and ADMET properties of the new compounds, along with drug similarity parameters, revealed favorable drug-like profile for the compounds. This suggests that these synthesized molecules hold promise as potential candidates for further development as therapeutic agents.

Conclusions: In the present research we synthesized two new N-substituted(carbamothyoil) thiophen-2-carboxamide with potential pharmacological action. The chemical structures of the compounds were confirmed using NMR and IR spectroscopy.

The compounds has a favorable molecular profile for the appearance of a multitude of biological activities. These predictions need to be further verified by in vivo tests.

In our current research, we successfully synthesized and characterized two novel N-substituted (carbamothyoil)thiophen-2-carboxamides that show promising potential for pharmacological action. The confirmation of their chemical structures was achieved through NMR and IR spectroscopy.

These compounds exhibit a favorable molecular profile, suggesting the possibility of possessing a wide range of biological activities. However, to validate these predictions and better understand their efficacy and safety, further in vivo tests are required.

The research will continue with a view to obtaine new compounds of similar molecular structure with enhanced pharmacotoxicological profiles.

ID823 Exploring the Potential of Dihydropyridines in the Treatment of Neurodegenerative Diseases

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Objectives: According to the World Health Organization, neurodegenerative diseases, such as Alzheimer's disease, Parkinson's disease, amyotrophic lateral sclerosis, epilepsy, or dementia, affect up to one billion of the planet's population. Although there are currently numerous drugs approved for various neurodegenerative pathologies, unfortunately, they are aimed mainly at relieving the physical and mental symptoms, and less to their physiopathological mechanisms. Thus, the aim of this research was to identify possible molecules with 1,4-dihydropyridine nucleus that would have the potential to act on the physiopathological mechanisms of neurodegenerative diseases.

Methods: Observation of the involvement of calcium channels in neurodegeneration, the dysregulation of intra-cellular calcium homeostasis favoring this study. The investigation of different dihydropyridines (obtained in our laboratory) was carried out by in silico analysis, using computer testing platforms (SwissADME, PassOnline, ADVERPred etc) to confirm possible utilization in neurodegenerative diseases. The tests were conducted in comparison with nilvadipine and isradipine, which are already known in the literature for their potential use in this type of condition.

Results: A possible pattern of use in neurodegeneration have been highlighted for both dihydropyridines already cited in the literature, and other dihydropyridine molecules not known in literature, such as dimethyl 4-(2-hydroxy-4-metoxifenyl)-2,6-dimetyl-1,4-dihydropirdin-3,5-dicarboxylate. With excellent gastrointestinal absorption and no substrate for glycoprotein-P, an efflux protein present in the brain, our 1,4-dihydropyridine had a bioavailability score of 0.55, being comparable to those reported in the literature.

Conclusions: The study demonstrated that the use of Computer-Aided Drug Design techniques simplifies and accelerates the process of identifying potential hit compounds in the dihydropyridine class, aiming to find new solutions for the treatment of neurodegenerative diseases, by impacting the mechanisms behind their occurrence.

ID824 Synthesis and Characterization of New Quinazolin-4(3H)-One Derivatives with Potential Antimycobacterium Tuberculosis Action

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Objectives: The genus Mycobacterium contains over 100 species that cause infections in humans and animals. Mycobacterium tuberculosis, the causative agent of tuberculosis, is responsible for the emergence of 10.6 million new cases of the disease (2022) which represents an increase in the incidence of 1.9% from the previous years. The objective of this study was the synthesis, physicochemical characterization and the in silico screening of new quinazoline derivatives with Schiff base structure as potenntial antitubercular agents.

Method: Prior to the synthesis, we performed the in silico analysis of the compounds using web tools such as SwissADME (http://www.swissadme.ch) and Way2drug (https://www.way2drug.com/PassOnline/index.php) to predict the pharmacotherapeutic, pharmacotoxicological profile, including possible drug interactions. The two actions that interest us were highlighted, the anti-tuberculosis action, respectively, the antimicrobial one. For the synthesis, we used microwave heating, using anhydrous ethanol as solvent and glacial acetic acid as catalyst. The derivatives were obtained by the reaction of (2-methyl-4-oxoquinazolin-3(4H)-yl) acetohydrazide with various aldehydes.

Results: The in silico study showed that the proposed molecules have high potential to be active in the treatment of tuberculosis, with minimal side effects and similar to those of already approved antimicrobials. Derivatives do not cross the blood-brain barrier, are not substrates for P-glycoprotein or cytochrome P450 enzymes. We synthesized these original compounds, which were then characterized physicochemically and spectrally (IR, ^{1}H-NMR, ^{13}C-NMR).

Conclusions: The confirmation of the chemical structure was carried out by specific spectral analyzes The research and development of new compounds with antimycobacterial action, based on the transformation of quinazoline derivatives into Schiff bases, is a promising direction of study. They can also represent a starting point for the subsequent synthesis of some complexes. Microwave heating is an efficient method for these syntheses, contributing to the optimization of the methods.

ID826 In Silico Evaluation and ADMET Profiling of Novel N-Heterocyclic Derivatives as Potential Anticancer Agents

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Objectives: In the attempt of finding effective anticancer agents, an increasing number of nitrogen-containing heterocyclic are synthetized. Among these, oxadiazoles have received particular interest. The present paper focuses on the in silico analysis in terms of pharmacokinetic, pharmacodynamics and biological profile of some novel oxadiazole derivatives.

Materials and methods: Oxadiazoles were previously synthesized starting from different aromatic carboxylic acids and different hydrazide derivatives. The SwissADME online tool was utilized to predict in silico drug-likeness characteristics, while PASS online was employed for forecasting the biological activity spectra.

Results: SwissADME predicted favorable pharmacokinetic properties for the compounds, including solubility and high gastrointestinal absorption. A bioavailability score of 0.55, which predicts the fraction of an orally administered compound that reaches systemic circulation, indicates a good pharmacokinetic profile. The bioavailability radar indicates an excess of unsaturated bonds in the structure of the analyzed compounds, which we have correlated with metabolic instability and the susceptibility of these compounds to metabolism by hepatic enzymes. All the compounds respect the drug-likeness rules like: Lipinski, Veber, Ghose, Egan and Muegge, as none violates more than one criterion set on each rule. The Boiled-Egg predictive model shows that all the molecules are predicted to be passively absorbed by the gastrointestinal tract. PASS online predicts for all compounds a high probability of being active anticancer agents, aiming various onco-targets. One possible mechanism of action is electron-transferring-flavoprotein dehydrogenase inhibitors.

Conclusions: The compounds do not violate the drug-likeness rules to qualify as orally active drugs and their in silico evaluation reveals that the compounds have a molecular profile that may have antiproliferative effects in cancer cells, due to their impact on cellular energetic metabolism.

ID866 Polyphenolic Extraction from Grape Pomace and Seeds

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Purpose: The wine-making industry is extensive and involves both the production of the main products (must, wine) and the production of by-products (grape marc, wine yeast and others) that can be reused for both chemical and pharmaceutical purposes. This paper focuses on obtaining an optimized method of extracting polyphenols from pomace and grape seeds, in order to later use them in these industries.

Method: Grape seeds and grape marc from six grape varieties of Vitis Vinifera were used to prepare ethanol and water-based extracts for analysing their polyphenolic content. The experimental design was based on polyphenolic extraction using ethanol 50% (v/v), ethanol 98% and distilled water. The total polyphenolic content was determined by the Folin-Ciocâlteu method.

Results: The extraction method is based on 3 variables: time, alcohol concentration and pH. For each product 15 extractions were performed. The total pholyphenolic content of the extracts was expressed as mg GAE/g and the results range from 0.44 mg GAE/g and 20.28 mg GAE/g.

Conclusion: The obtained results could be taken into consideration in order to determine an optimized method for polyphenolic extraction, in order to gain a higher yield. This could lead to better investigation of the by-products of wine-making, making it easier to obtain valuable raw materials that could be important in different industries.

ID878 Studies on the Obtaining of Topical Anti-Acne Preparations

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Objectives: Acne, a pervasive and enduring skin condition, manifested by painful inflammation, papulopustular lesions, itching, and erythema, is a widespread and persistent problem that greatly affects young and old people, affecting their personal well-being and society's perception.

This study aimed to develop and assess topical acne treatments, incorporating natural and synthetic active ingredients with various beneficial properties These properties included restructuring (by squalene, avocado oil, vitamin A), moisturizing, (by allantoin, acid hyaluronic, niacinamide) exfoliating (by benzoyl peroxide, salicylic acid), anti-inflammatory (by panthenol, olive oil, arnica extract, aloe gel), antibacterial (by erythromycin, clindamycin, chamomile oil). Ingredients preventing skin ageing due to oxidative stress of cells or exposure to the sun (vitamin E, zinc oxide) were also used.

Method: The study involved formulating two sophisticated L/H type creams (a photoprotective day cream and a nourishing and regenerating night cream), as well as two emulgels and two gels based on 1% carbopol gel and 4% xanthan gel tailored for adolescent acne treatment. Following meticulous preparation, the products underwent comprehensive evaluations for their organoleptic properties, pH levels (potentiometric method), plasticity (Ojeda Arboussa method) and viscosity (B-One Plus Rheometer). Additionally, their impact on skin hydration (Corneometer CM825), melanin, and erythema levels (Mexameter MX18) was thoroughly examined.

Results: The results unambiguously indicated that the emulgels, creams and gels exhibited exceptional spread ability, optimal flow, and remarkable skin-hydrating properties, while significantly reducing erythema levels. Importantly, these products did not compromise the skin's natural pH level.

Conclusions: The findings of this study not only affirm the efficacy of the developed acne treatment preparations but also lay a solid foundation for further optimization

ID891 Synthesis, Characterization, Crystal Structure and Acute Toxicity Evaluation of PD(II) Complexes with Schiff Bases Derived from 4-Aminoantipyrine

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Objectives: Schiff bases are recognized as one of the most important classes of ligands due to their structural and biological properties. They play a major role in the development of stable complexes with transition metal ions, which are widely studied for their therapeutic potential, including antitumoral, antibacterial, antiviral, antifungal and anti-inflammatory activities. In recent years, considerable attention has been directed towards the evolution of Pd(II) complexes with Schiff base ligands, owing to their broad spectrum of promising biological potentials. As antitumor agents, they demonstrate significant efficacy with considerably fewer side effects. Additionally, they possess antibacterial, antifungal and antioxidant properties.

This study presents the synthesis, characterization and investigation of their acute toxicity palladium complexes with Schiff bases derived from 4-aminoantipyrine.

Methods: The Schiff bases were obtained by refluxing in ethanol an equimolar amount of some aromatic aldehydes with 4-aminoantipyrine.

The complexes were synthesized by treating the ligands with palladium acetate. The new obtained compounds were characterized by elemental analysis, IR, ^{1}H, ^{13}C NMR, UV-Vis spectroscopy, magnetic susceptibility measurements and molar electrical conductivity. In addition, the structure of the ligans has been determined by single-crystal X-ray diffraction analysis. The compounds underwent acute toxicity testing on two species: a botanical species (Triticum aestivum L.) and an animal species (the crustacean Artemia franciscana Kellogg).

Results: The physico-chemical analysis confirmed the new structures of the ligands and the Pd(II) complexes. In all complexes, the Schiff bases act as bi- or tridentate ligands coordinating to the metal center through the O-N or O–O-N

chelating system. Their impact on the growth of monocot and dicot roots, as well as their toxicity to brine shrimp, varied according to the concentration evaluated.

Conclusions: The research carried out in this study allowed the diversification of the base of Pd(II) complexes with an assessment of their toxicity and potential biological action.

ID898 Development of Tablets with Inclusion Complexes of Quercetin

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Objectives: Quercetin is a bioflavonoid with strong antioxidant activity, comparable to that of ascorbic acid. It also has numerous other effects such as heart protective, hypoglycemic, hypocholesterolemic, anticancer and neuroprotective. Nonetheless, a challenge with quercetin is its low solubility and bioavailability. In this study, we tried to eliminate these inconveniences by including quercetin in cyclodextrins (natural, water-soluble, non-toxic cyclic oligosaccharides) and processing the inclusion complexes into dosage pharmaceutical forms for oral administration.

Method: In the first step, we obtained solid-state inclusion complexes of quercetin with β-CD/ methyl-β-CD, which were evaluated by SEM, DSC, FT-IR, and X-ray diffraction, constituting some tablets' active ingredient.

The inclusion complexes obtained by the trituration method (in solid state) were mixed with directly compressible excipients, resulting in finely composed powders with a similar appearance regardless of the type of cyclodextrin used. After testing the flow characteristics, it was observed that the composite powder containing the quercetin-β-CD complex presented an average flow, with no need to shake the sample, and the mixture containing the quercetin-methyl-β-CD complex presented a satisfactory flow, with stirring being necessary.

Results: The mixtures containing the inclusion complexes quercetin-β-CD, and quercetin-methyl-β-CD allowed the application of direct compression technology (Korch type eccentric machine), resulting in uncoated tablets with similar organoleptic and physical characteristics.

Conclusions: We determined the height and diameter of the tablets, the uniformity of the mass, the mechanical resistance, the friability and the disaggregation time, and the tablets containing the inclusion complexes of quercetin with the selected cyclodextrins passing the qualitative tests with good results.

ID899 Development and Evaluation of Dermato-Cosmetic Products Useful in the Treatment of Alopecia

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Objectives: In the present study, we have addressed a problem that deeply affects the lives of many people, namely hair loss. Hair care products play an essential role in maintaining health and appearance, especially for those affected by alopecia. Alopecia affects millions of women and men globally, having a significant impact on self-esteem and quality of life.

Thus, in this study, I have developed, optimized, prepared and evaluated several formulas of shampoo and hair masks, which are based on a complex tincture obtained from several vegetable products: lavender, burdock, rosemary, sage, rich in volatile oils, terpenes, flavonoids, phenolic compounds, phytosterols, proteins, vitamins, minerals, but also minoxidil, the only active ingredient approved for hair growth.

Method: All experimentally obtained formulations were subjected to control tests to determine their characteristics and quality.

Results: Thus, we found that the preparations correspond from an organoleptic point of view to the current requirements and consumer preferences and have a pH suitable for their intended use. The most important characteristic of a shampoo in the eyes of the consumer is its foaming ability.

Our formulations demonstrated consistent foaming and cleaning capabilities across the studied range. We have concluded that the shampoo with the lowest amount of alcohol in the composition has the highest foam layer and the best washing capacity.

Conclusions: These types of dermato-cosmetic preparations are of major importance in the lives of those suffering from alopecia, as they contain specific ingredients that help strengthen hair follicles, improve blood circulation in the scalp and provide the nutrients necessary for healthy hair growth. With regular use, many people can help reduce hair loss and encourage hair regeneration, ultimately contributing to improved self-confidence and overall well-being.

ID927 Toxicity Profile of Herbal Extracts from Dryopteris and Polypodium Species in Crustacean Bioassays

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Objectives: This study aimed to evaluate the toxicity of extracts from aerial parts of Dryopteris and Polypodium species on two crustacean species: Ceriodaphnia dubia and Heterocypris incongruens. The current research aims to explore the safety profile of these plants by evaluating the potential toxic effects on aquatic organisms, due to the knowledge of the historical use of Dryopteris carthusiana in vermifuge applications, due to the active component "filicin" and the use of Polypodium vulgare in traditional medicine for multiple ailments, from jaundice with gastrointestinal spasms.

Methods: Extracts were previously obtained from the aerial parts of the plants using water refluxing process, followed by lyophilization. The toxicity testing involved varying concentrations of these extracts, ranging from 500 to 10 μg/mL. The subjects used were chosen due to their sensitivity to environmental changes. The two crustacean species derived from laboratory cultures of Ceriodaphnia dubia and Heterocypris incongruens.

Results: Lethality curves were constructed by using the least squares method to calculate the lethal concentration 50% LC50. 95% confidence intervals of LC50 were calculated to ensure accuracy. Results indicated that at higher doses, significant lethality (L%) was observed, whereas lower concentrations showed negligible toxic effects. Notably, Ceriodaphnia dubia demonstrated a greater sensitivity to the extracts compared to Heterocypris incongruens.

Conclusions: Crustacean bioassays provided important data on the toxicity range and ecotoxicological implications of Dryopteris and Polypodium extracts. While extracts show grater toxicity at high concentrations, their use in traditional medicine at lower dose probably remains safe. This study highlights the importance of ecotoxicological assessments in the context of traditional plant use, ensuring the maintenance of both human health and environmental safety. This research represents a foundation for additional toxicological and pharmacological studies on these medicinal plants.

ID931 Toxicological and Behavioral Analysis of Heterocypris Incongruens (Ramdohr) Exposure to Caffeine and Ethanol

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Objectives: The aim of our study was to investigate both the acute toxicity and behavioral influence of two widely distributed CNS-acting drugs, caffeine and ethanol, on Heterocypris incongruens (Ramdohr), an ostracod (seed shrimp) crustacean, primarily employed as bioindicator of environmental and/or aquatic quality. Its close interface with freshwater sediment makes it particularly suitable for evaluating the effects of trace substances which are abundant in human-altered environments. Thus, we pursued two main objectives: to calculate the lethal concentrations (LC50) of these substances and to estimate their sublethal effects on movement patterns and behavior of H. incongruens.

Methods: Laboratory-cultured groups of H. incongruens were exposed to different concentrations of caffeine and ethanol (treatments ranging from 1 μg/mL to 100 mg/mL), to assess toxicity. Lethality was observed and recorded at 24- and 48-hours, post-treatment. Movement patterns and behavior were analyzed through a set of nonclinical endpoints (including total distance traveled and swimming speed), compared against an untreated control; output and calculations were executed with image-processing software (Fiji) and in-house algorithms (Python 3.12).

Results: LC50 values were derived from lethality curves using the least squares fitting method, with corresponding CI95 confirming the reliability of the calculated concentrations. Higher doses of both substances resulted in significant lethality, while lower concentrations exhibited negligible toxic effects. Notably, both caffeine and ethanol significantly altered the movement behavior of H. incongruens, as supported by changes in the selected endpoints for treated groups.

Conclusions: The study highlights H. incongruens as a valuable alternative model for evaluating toxic and stimulatory/depressant effects of common substances. Also, distinct behavioral changes observed at sublethal concentrations suggest potential trophic or collective disruptions in contaminated habitats. Our findings broaden the understanding of the consequences of anthropogenic involvement, while supporting the use of H. incongruens as a potential alternative nonclinical model.

ID829 Correlation of Gene Expression Profiling and Gleason Scores in Prostate Cancer

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Objectives: The study aimed to investigate the gene expression profiles associated with Gleason scores (GS) in prostate cancer (PCa) patients using transcriptomic data with focus on identifying molecular abnormalities, correlating tissue differentiation with gene expression, and proposing a gene signature predictive of Gleason grade groups, with potential implications for diagnosis and prognosis.

Methods: Using publicly available transcriptome expression data from The Cancer Genome Atlas (TCGA), we evaluated modifications in hub proteins and their clinical significance in 497 samples from PCa patients and 52 without pathology. Gene ontology, gene set enrichment analysis (GSEA), and STRING network analysis were performed to understand the biological processes, cellular components, and molecular functions associated with different GS. Immune cell populations were assessed using CIBERSORTx. Finaly, a gene signature to classify GS was proposed after a combinatorial approach with k-Nearest Neighbors and validated using immunohistochemistry data from the Human Protein Atlas (HPA).

Results: Higher Gleason grade groups were associated with increased cell division, telomere lengthening, and DNA damage response, but decreased vasculature development and cell polarization. Regulatory T cells and M2 macrophages were more abundant in higher grade tumors. STRING analysis identified two distinct clusters of genes related to GS, with key nodes such as *PLK1* and *CDC20* being overexpressed in higher Gleason tumors and *CAV1*, *CALM1*, and *PAK3* under-expressed. The proposed eight-gene signature (*FOXS1*, *NSD2*, *CDC42EP4*, *AGL*, *VPS36*, *TMLHE*, *ANGPT1*, and *C22orf23*) showed high accuracy in differentiating between normal, low-Gleason, and high-Gleason tissues, with validation confirming the findings.

Conclusions: The study identified significant molecular changes associated with GS in PCa, highlighting the role of immune cell populations and key gene networks. The proposed eight-gene signature offers a tool for predicting Gleason grade groups, with potential clinical applications in improving the diagnosis and prognosis of prostate cancer. Further studies are needed to validate these findings and explore their clinical utility.

ID830 Perception of Hand Hygiene in Healthcare Workers in a Tertiary Hospital in Bucharest

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Background: Healthcare-associated infections are a serious concern in all healthcare facilities, leading to significant costs and morbidity. Up to 50% of infections can be prevented through effective hand hygiene (HH). Our study aims to asses the behaviors of healthcare workers (HCW) regarding HH.

Method: We conducted a cross-sectional study among 81 HCW (of which 44 nurses, 13 nurse-assistants and 24 physicians) in the ICU of the Emergency University Hospital Bucharest, between January and February 2024, using a custom questionnaire distributed via Google Forms. The questionnaire included 5 questions on HH behaviors.

Results: Most respondents preferred hand washing (32/81) or opted for both handwashing and handrub (33/81). Additionally, 72 respondents indicated that they perform HH after glove-removal and rarely do so before donning the gloves. The reasons for not washing their hands include fear of dermatitis (36/81), the lack of time (24/81) and 9 cited the lack of resources. No correlation was found between the lack of time or between the fear of dermatitis and age (p=0,384 366 and p=0.624 respectively). Regarding the wear of jewelry and nail polish, 17/81 respondents do not wish to remove them or consider that they do not interfere with HH. No correlation was found between the job category and the lack of desire to remove nail polish and jewelry (p=0.492). Most respondents (33/81) suggested that HH can be improved through changing the disinfectants, while 31 requested more gloves and 14 were interested in training sessions and posters.

Conclusions: The current study reveals that the lack of education or resources are not a significant issue, prompting alternative interventions for HH, ones that focus on changes in the behavior. Additional studies are needed to discover the best approaches, as part of a multimodal program that aims to increase HH compliance and to reduce the burden of infections.

ID835 Mechanical Homogenization Method of Soft Tissues Used in the Microbiological Diagnosis of Orthopedic Infections

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Objectives: Infections pose a significant challenge in orthopedic surgery, with their high morbidity, mortality, and treatment costs. In the face of escalating antibiotic resistance, identifying and susceptibility testing microorganisms isolated from these infections is paramount. This study aims to evaluate the impact of a novel technique, the mechanical homogenization method, for identifying and recovering bacterial species that may be present in potentially septic soft tissues, either periprosthetic or otherwise.

Methods: Soft tissue samples were obtained from patients hospitalized at the orthopedics department of a tertiary medical center. These samples were then carefully inserted into sterile Eppendorf tubes containing brain heart infusion (BHI) medium. The next step involved using metal grinding pellets to process the samples, followed by vigorous vortexing to ensure complete homogenization. The resulting liquid was then extracted and transferred into new sterile tubes, which were centrifuged. The supernatant was removed, and the sediment was placed in aerobic and anaerobic conditions on solid and liquid culture media (Blood-Agar, Chocolate-Agar, Chromogenic differential media, BHI, Schaedler). The media were incubated for at least 24 hours at 37 °C and then analyzed. The bacterial species were identified using matrix-assisted laser desorption/ionization-time of flight mass spectrometry.

Results: Data obtained by applying this method to 12 analyzed samples allowed the appreciation (without statistical significance) that this method has a high sensitivity and specificity, as bacterial recovery and growth capacity are much higher than the classic method, facilitating the diagnosis of soft tissue infections. The data and images obtained during the study will be presented.

Conclusions: Compared to the classic method (inoculation directly on culture media), this method has significantly better results, involves lower costs, and can be easily implemented in microbiology laboratories. We plan to test bone tissue soon.

ID837 Developing a Murine Borreliosis Model, Preliminary Results

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Introduction: Creating an animal model for an infectious disease is fundamental for understanding the pathology and developing treatment strategies for the disease. One of the most important aspects in establishing such a model is isolating the infectious agent inoculated in the experiment. However according to literature isolating the spirochete from various borreliosis models is challenging

Aim: Isolation of cultivable spirochetes from tissue samples of mice infected with Lyme disease-causing spirochete.

Understanding different inoculum aspects that influence bacterial recovery through culture.

Taking the first steps towards developing a stable and efficient borreliosis murine model that can be used for further studies assessing antimicrobial effects of newly developed molecules.

Method: We inoculated C3H mice with a GFP (green fluorescent protein) marked and gentamicin resistant (via plasmid) *Borrelia garinii* strain.

Mice underwent 5 days of gentamicin and cortisone treatment to promote borrelial recovery, before being humanely euthanized.

Samples from the ear, joint, bladder, heart, dura mater and brain were taken and put into a modified Barbour-Stoner-Kelly medium (BSK-H) in which gentamicin and amphotericin-B were added. Tubes were incubated at 33℃ and examined weekly under fluorescent microscopy to assess culture positivity.

Results: Spirochetes were recovered from different organs and the rate of culture positivity varied depending on the time of sampling and inoculum dose.

Conclusion: A high inoculum dose is necessary to isolate in culture spirochetes from various tissue samples of the infected mice.

The rate of culture positivity lowered as more time passed since the moment of animal inoculation.

This study provided significant information for developing a murine borreliosis model.

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ID847 Hematological Markers for the Diagnosis of Experimental Neuroborreliosis

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Introduction: Lyme disease, transmitted by ticks, is widespread but difficult to diagnose because of its varied clinical manifestations. Researchers use animal models to understand the pathogenesis or evaluate treatments for the disease.

Objectives: In this study, we aimed to induce neuroborreliosis in a mouse model inoculated with *Borrelia garinii* spirochetes (10^6 spirochetes/mL) intracerebrally and intradermally.

Materials and methods: We used 60 C3H mice, 10 weeks old, male and female, which we allocated according to inoculation route and time of slaughter (at day 7, 14, 28, 35,42, 60, and 90). The animals were clinically evaluated daily and at the established times, blood samples were weighed, collected for hematological examinations from some animals, and euthanized for collection of tissue samples for identification of borrelia by microbiological, PCR, and immunohistochemical examinations. Following hematological examination, we analyzed both mononuclear cells (lymphocytes, monocytes), polymorphonuclear cells (neutrophils, eosinophils), platelets, and systemic immune-inflammatory index.

Results: Statistical analysis of the data showed that lymphocytes, monocytes, neutrophils and eosinophils increased significantly between day 14 and 28 ($p < 0,0001$- $p < 0,05$) then decreased until the end of the study unlike platelets which from day 21 showed a downward trend ($p < 0,0001$), in contrast, to mean platelet volume and platelet distribution width ($p < 0,05$).

Conclusions: The results of the hematological examination can guide the active phase of borrelia in the mouse model so it can be estimated that between 21-28 days post-inoculation, regardless of the route of administration of the spirochetes, the disease is in full activity and testing of new treatments is appropriate.

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ID863 Thymolipoma in a 54-Year-Old Female: a Rare Mediastinal Tumor

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Background: Thymolipoma is an uncommon benign tumor of the mediastinum composed of mature adipose tissue and thymic elements. Due to its rarity and often asymptomatic nature, thymolipoma can be a diagnostic challenge and is often discovered incidentally during imaging for other conditions. This case report highlights the clinical, macroscopic, and histopathological features of a thymolipoma in a 54-year-old female.

Case description: A 54-year-old female presented with a clinically diagnosed thoracic tumor. A mediastinal tumor measuring 10 cm x 13 cm x 5 cm was excised and submitted for histopathological examination. Macroscopically, the tumor appeared as a nodular formation with a gray-yellow coloration and reduced consistency. Histopathological examination revealed a proliferation of mature adipose tissue with adipocytes of variable sizes, separated by fine connective septa originating from an adjacent pseudocapsule containing capillary sinuses, lymphoid tissue, and abortive Hassall corpuscles. These histopathological features are consistent with a diagnosis of thymolipoma.

Discussion: Thymolipoma, although rare, should be considered in the differential diagnosis of mediastinal masses. The histopathological findings of mature adipose tissue intermixed with thymic elements are characteristic of thymolipoma. It is important to interpret these findings in the context of clinical imaging, patient history, and laboratory tests, including evaluations for conditions such as myasthenia gravis, lichen planus, and Graves' disease.

Conclusion: This case underscores the importance of considering thymolipoma in the differential diagnosis of mediastinal tumors. Accurate diagnosis through histopathological examination and correlation with clinical and imaging findings is crucial for appropriate management. Further immunohistochemical studies may aid in confirming the diagnosis.

ID892 Acute and Chronic Diseases, Challenges for Surgeons – Importance of Fibrinogenemia

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High fibrinogenemia indicates inflammation and a higher risk of thrombosis. Besides fibrinogen, elevated white blood cells, CRP (C-reactive protein), and other markers can support the need for urgent surgery. In some cases, elevated fibrinogen indicates a need for careful monitoring and possibly additional preoperative preparation to manage potential complications.

The aim of this study was to evaluate usual inflammatory parameters in patients admitted to the surgery ward.

The study included patients with acute appendicitis (n=36), acute cholecystitis (n=38) and those with colon cancer (n=36) who were admitted in a small-town hospital at the surgery ward, between May 2022 and September 2022.

The patients from these three groups had hyperfibrinogenemia (541 mg/dl, 596 mg/dl and 501 mg/dl respectively) and leukocytosis with high PMN. The predominant pathophysiological mechanism for acute cholecystitis was lithiasis (72%). Most of the patients (68%) with cholecystitis experienced complications such as pancreatitis, reactive hepatitis or pericholecystic, subhepatic/perivisceral abscess.

Gangrenous acute appendicitis was diagnosed in over half of the appendicitis patients, with localized peritonitis also frequently described. However, over 50% of acute appendicitis patients did not undergo bacteriological examination of peritoneal fluid or appendicular secretion.

Half of the patients with colon cancer had hypoalbuminemia and severe anemia requiring blood transfusions. 21.73% of patients with colon cancer had metastases.

The study highlights the presence of the inflammatory process in surgical emergencies and raises an alarm about the late presentation of patients, who undergo surgery in advanced stages, with complications.

ID893 Biological Parameters in Pregnant Women with Urine Tract Infection or Genital Infection

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Infectious pathologies during pregnancy can cause severe obstetric complications, including preterm birth, intrauterine growth restriction, spontaneous abortion, and can endanger both the mother and fetus. The golden standard for detecting genital infections in pregnancy is the nucleic acid amplification tests (NAATs) but it is not used routinely.

This study focuses on three types of infections: urinary tract infections (UTIs), genital tract infections, and chorioamnionitis, based on the microbiological analysis of urine, vaginal and cervical secretions, as well as amniotic fluid.

The study included pregnant women who were admitted to the gynecology ward of an Emergency Hospital from a small Romanian town, between January 2023 and June 2023, for urine or genital infections. So, 24 pregnant women were with UTIs, 26 had chorioamnionitis and 40 were with lower genital tract infections.

Microbiological analysis of the pathological products revealed a majority involvement of E. Coli in both UTIs and genital tract infections. In contrast, the bacteria most frequently involved (70 % of cases) in chorioamnionitis was Streptococcus Agalactiae followed by Staphylococcus species (aureus or haemolyticus) and in 15% of cases, fungal infection with Candida was described.

Leukocytosis (>11000/ml) and elevated levels of C-reactive protein (>5 mg/dL) were detected in only 30% of cases with chorioamnionitis. Leukocyturia and nitrites were present in only half of the cases with UTI. Fibrinogenemia was high and has been positively associated with platelet count (r=0.44).

In conclusion, bacterial culture of the urine, vaginal secretion or amniotic liquid is a classical method still used for isolating and identifying bacteria or fungi from collected samples and can provide additional information about antibiotic susceptibility. Leukocitosis and/or leukocituria are present in less than half of pregnant women with UTI or genital infection.

ID916 Surveillance of Monkeypox Cases in an Infectious Diseases Hospital, 2022-2023

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Objectives: Monkeypox has emerged as a significant public health concern in the post-COVID-19 pandemic era. This study aims to present the main clinical and epidemiological characteristics of monkeypox cases confirmed in a tertiary infectious diseases hospital in Romania, between June 2022 to May 2023.

Methods: We conducted a prospective descriptive study based on data from patients diagnosed with monkeypox at the National Institute of Infectious Diseases Prof. Dr. Matei Balș. Data were collected through questionnaires completed for each suspected case, according to the national surveillance methodology. Also, we collected the results of the molecular tests performed at the hospital laboratory.

Results: Thirty-eight suspected cases were reported, of which 23 (60.5%) were confirmed, and 15 (39.5%) were classified as probable. The highest number of cases was in 2022 (n=29, 76.3%). The disease was more frequently observed in males (n=35, 92.1%), male-to-female ratio 11.6:1 and in the age group 31-40 years (n=18, 47.4%).

Most cases were recorded among heterosexual patients (n=16, 42.1%), followed by homosexual patients (n=10, 26.3%). Six cases (15.7%) required continuous hospitalization. Seventeen patients (44.7%) had a documented HIV infection and 12 patients (31.5%) syphilis.

The mode of transmission was identified for 20 (52.6%) patients, sexual contact being the most frequent (n=15, 39.4%).

The majority of patients (n=34, 89.4%) presented characteristic symptoms and systemic manifestations (n=22, 57.9%). The main symptoms and sign were rash (n=26, 68.4%) and genital lesions (n=16, 42.1%).

A limitation of the study is that information on exposure and sexual behaviors were difficult to obtain, and data were often incomplete.

Conclusions: Monkeypox, a zoonotic viral disease emerging at the human-animal-environment interface, can be addressed from a One Health perspective, emphasizing the necessity of interdisciplinary collaboration. Continuous training of healthcare personnel on emerging infectious disease challenges is essential for early diagnosis and implementation of prevention and control measures.

ID918 Individual Colorimetric Map for Monitoring Chronic Alcoholics

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Alcohol primarily affects the liver, and the patient cannot overcome the addiction alone; they need help. Illustrating the improvement of biological values through colors can help guide a chronic alcoholic towards recovery.

The aim was to analyze the biological values of alcoholics and create individual colorimetric map for each patient based on these values for monitoring purposes.

Seventy-three adult patients diagnosed with chronic alcoholism were divided into two groups based on a cutoff of 2 for the AST/ALT ratio (de Ritis ratio). Those with values above 2 (n=30) had higher INR and lower albumin levels, which are known as liver disease severity indicators. For the colorimetric map, the de Ritis ratio with a value above 2 was assigned yellow, GGT with a value above 50 UI/L was assigned yellow and if both parameters were abnormal, red was assigned. The programme was written in Exel VBA. Additionally, values of triglyceridemia, uricemia, and MCV were included in the color algorithm for various shades.

Some of the patients were monitored over three months, and those who remained abstinent moved from the red/orange zone to the yellow zone. The motivational impact was strong and encouraged them to continue

The visual impact of the colours and understanding of improved biological values during abstinence help the alcoholic steer towards the right habits.

ID921 Exploring the obstacles in studying the impact of gestational gut microbiome disruption and perinatal asphyxia on neurodevelopmental reflexes in rat offspring

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Introduction and targets: The gestational gut microbiota plays a crucial role in shaping infant neurobehavior and postnatal brain resilience. The aim of this research is to address the challenges involved in examining the impact of gestational antibiotic administration (GAA) and perinatal asphyxia (PA) on the neurodevelopmental reflexes of offspring.

Materials and methods: A preliminary study investigated the effects of an initial antimicrobial cocktail (GAA-1) and perinatal asphyxia (PA) on Wistar rat offspring. GAA-1 treatment began on gestational day 11, using a mixture of ampicillin, vancomycin, neomycin, clindamycin, and amphotericin-B, followed by PA exposure on postnatal day (PND) 6. Early-life behavioral assessments, including the righting reflex (RR), limb grasping reflex (LGR), cliff avoidance (CA), negative geotactic reaction (NGR), and grip strength response (GSR), were conducted on PND 7-9.

Due to higher miscarriage rates, the antimicrobial cocktail was revised to a pregnancy-safe formulation (GAA-2) containing ampicillin, vancomycin, neomycin, and meropenem. Additionally, a multi-strain probiotic was incorporated with the antibiotic cocktail to study its effects on the neural development of the offspring. Neurodevelopmental reflex assessments were repeated on PND 7-9 to evaluate the outcomes.

Results: GAA-1 caused more miscarriages and lower birth weights in offspring. PA significantly lowered oxygen saturation levels to 45.41%. Both PA and antibiotic groups experienced consistently prolonged response times, with slight variations across tests. GAA-2 did not cause miscarriages. Offspring from the antibiotic group had impaired neuroreflexes in RR and NGR, which were partially improved with probiotic supplementation. No significant effects were seen in GSR.

Conclusion: Preliminary findings indicate that maternal gut disturbances and PA could cause early-onset brain impairment, underscoring the need for caution in recommending GAA. Probiotics show potential in mitigating PA-related neurodevelopmental issues. Further research into the impact of maternal microbiota on brain development may yield novel therapeutic strategies.

ID922 Gestational Stress and Antibiotics: Do They Influence the Postpartum Maternal Behaviour

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Introduction and objectives: Offspring health is influenced by the prenatal microbiome, possibly by potentially altering postpartum maternal behaviour. Prenatal stress and gestational antibiotics disturb the microbiome, posing risks to the mother and her offsprings. Here we will present two studies with the goal of highlighting the impact of both antibiotic administration and stress during pregnancy on postpartum maternal behaviour. Furthermore, the beneficial effect of administering a multi-strain probiotic during gestation was assessed. Wistar rats have been used in these studies.

Materials and methods: For antibiotics evaluation, we administered an antibiotic cocktail (ampicillin+vancomycin+neomycin+meropenem) to a subgroup of pregnant rats daily (4pm-8am) starting with embryonic day (E) 11. Another sub-group was given additionally a multi-strain probiotic daily (8am-4pm). Alongside maternal care and anxiety evaluation, depressive tendencies in maternal behaviour were assessed using Forced Swim Test. Regarding gestational stress evaluation, the pregnant rats were subjected to one week of restraint stress (E14). A subgrup received probiotic supplementation. During postnatal day 6 pup retrieval latency was evaluated to assess maternal care. Afterwards, Elavated Plus Maze and Open Field Test were used post-weaning to evaluate anxiety.

Results: Dams in the antibiotic group presented increased anxiousness and depressive-like behaviour, without any effect on maternal care. Probiotics did not alleviate these behavioural manifestations.Gestational stress affected maternal care, inducing anxious behaviour, an effect alleviated by probiotic treatment ($p<0.05$).

Conclusion: Both adverse gestational events exert negative effects on postpartum maternal behaviour, leading to anxiety, and depression in the case of antibiotics. Probiotics might be a solution for reducing the negative impact of gestational stress but not that of antibiotics. Thus, the necessity of prenatal intervention for shaping maternal behaviour becomes apparent, we have shown that multi-strain probiotics can be taken into consideration as a viable option for mitigating adverse outcomes during pregnancy.

ID943 Deciphering Angiogenesis in an in Vivo Study Model of VEGFA Production from Human Primary Liver Cells

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Introduction: The process of replacing human cells or organs to restore normal function holds the promise of regenerating damaged tissue function. The vascular niche is of particular importance in organogenesis due to developmental factors that are secreted by specific cells that are the "building blocks" of blood vessels. The aim of the present study was to observe the angiogenesis process by evaluating VEGFA expression in an *in vivo* study of human primary liver cells (hPLC).

Methodology: Our studies included: (1) obtaining adult hPLC (n=4); (2) infecting the adult hPLC with Ad-VEGFA and Ad-CMV-GFP for 48 hours and (3) implanting the cells *in vivo* under immune deficient SCID-Beije mice skin together with cells that secrete human VEGFA. We compared gene and protein VEGFA human and mice expression levels of the implants by RT-qPCR and multiplex LUMINEX techniques at different time points 3, 14, 30 and 60days. Protein mice VEGFA levels in serum were also included.

Results: The mixed cells implanted subcutaneous secrete VEGFA time dependent for promoting local vascularization. Micro vascularization was represented by small reddish, bloody portions along the entire length of the implant and associated with the subcutaneous tissue to which the implant was attached. Another parameter included in the overall toxicity analysis was the survival rate of the animals included in the study between the time of cell injection and the time of implant collection. The human VEGFA secreted from the co-implanted cells as expected promote local vascularization that support implant survival and function.

Conclusions: The results of our study highlight that adult hPLC can survive and function for long periods of time (2 months) in poorly vascularized implantation sites. In addition, cells implanted subcutaneously are not distributed by circulatory route to the other organs of mice, which makes the method of cell implantation safe in cell therapy.

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ID810 The Effects of Dyslipidemia and Dietary Protein on the Progression of Diabetic Kidney Disease

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Background: Diabetic kidney disease (DKD) is described as the persistent presence of kidney injury (either by impaired glomerular filtration rate, albuminuria, or histological alterations) in subjects with diabetes mellitus (DM), in the absence of signs of other forms of kidney disease. Diabetic kidney disease is a heterogeneous disease, which includes multiple and complex overlapping etiologic pathways.

Aim: In this article, the focus is on chronic kidney disease (CKD) attributed to diabetes (diabetic kidney disease), specific to two modifiable risk factors CKD progression in DKD: dyslipidemia and dietary protein.

Materials and methods: 67 patients with type 2 diabetes mellitus and chronic kidney disease (CKD) hospitalized between 2019-2023 were reviewed into a retrospective study.

Results: Out of 67 patients, 37 (55.2%) were females. The mean age of the group was 57.8+- 8.4 years, mean duration of diabetes 11.8+- 7.3 years and baseline. Ccr was 57.8+- 28ml/min. The mean nPCR was 0.85+- 0.24g/kg/day. Females had higher BMI and serum lipids compared with males: 29.6+- 5.3kg/m^2 and 11.5+- 3.1 g/l compared with 26.4+- 2.8 kg /m^2 and 9.6+- 3.2 g/l, respectively, $P < 0.005$.Significant correlations between delta Ccr, age, proteinuria, and other variables are shown in Table 2. The only strongest independent factors as predictors for CKD progression identified by stepwise multiple regression analysis were: younger age (β=0.25), proteinuria (β= - 0.24), and baseline Ccr (β= - 0.51),F=11.19, P=0.000000.When proteinuria was excluded from the final model, then the only strongest predictors for CKD progression were younger age (β=0.361), higher mean arterial pressure (β= -0.43),higher cholesterol (β= - 0.43), and higher baseline Ccr (β= - 0.41),F=12.17, *P*=0.000000.

Conclusion: Our study showed that proteinuria is the strongest predictor of chronic kidney disease (CKD) progression in type 2 diabetics, dyslipidemia and blood pressure are of limited importance , protein intake has no beneficial effect, and age has a protective role upon progression of chronic kidney disease.

ID813 Evaluating the Degree of Patient Satisfaction in the Emergency Department of „M.S. Curie" Clinical Hospital for Children

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The objective of this qualitative two-phase questionnaire-type study is to evaluate for a one week period the degree of satisfaction for patients presenting in the Emergency Department (ED) of „M.S. Curie" Clinical Hospital for Children, to observe what the main complaints of patients and their caregivers are, followed by a set of measures to improve patients' satisfaction and the replication of the questionnaire in similar conditions in order to observe whether or not there is an improvement.

The study focuses on collecting data from patients through a questionnaire. The questions are related to the caregivers' appreciation of the urgency degree in the child's case, the time passed until the first medical examination, the perception of the time spent in the ED, comparing the experience with that of other EDs and the primary medicine clinics, grading the appreciation of the services provided by the medical and non-medical staff, the desire to return or not to the ED, but also expressing the positive and negative aspects regarding the ED.

After collecting and analyzing data from the first stage of the study, the measures taken within the ED were engaging the medical personnel in a patient communication course, hiring additional staff and suplimenting the on-call team with an additional doctor.

The results of the study's second phase revealed the fact that the general satisfaction of patients and caregivers has improved, with the increase in positive responses regarding the perception of communication with the ED staff, the decrease of the waiting time until the first medical consultation, but also an improvement in the grading awarded to ED staff.

Thus we have found efficient and we encourage taking specialized patient communication courses, hiring additional staff and its preservation by maintaining a friendly climate within the department, as well as supplementing the on-call teams.

ID815 Case Report: The Importance of Genetic Testing in the Management of Neurofibromatosis Type 1

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Introduction: Neurofibromatosis type 1 (NF1) is a one of the most common genetic disorder that primarily affects the central and peripheral nervous systems, characterized by the presence of neurofibromas, multisystemic manifestations and an increased predisposition to malignant tumors of nervous system.

Objectives: This article describes a case of a 51-year-old male with multiple painless cutaneous and subcutaneous nodules (>20), ADHD symptomatology, dysarthria, café-au-lait spots on the skin, freckles in the armpits and pectus carinatum. Also, our study highlights the importance of using the recommended guidelines for reporting sequencing variants.

Methods: The patient, diagnosed with neurofibromatosis type 1 (NF1) based on clinical criteria, underwent genetic testing for sequence analysis using The Blueprint Genetics Neurofibromatosis Flex Panel Plus Analysis. Also, because the proband is part of a multiple affected family, we performed a genogram to identify the inheritance pattern and the offspring's risk of having NF1.

Results: The sequence analysis identified a heterozygous missense variant in the NF1 gene c.2540T>C, p.(Leu847Pro), which results in the amino acid substitution of Leucine to Proline at position 847. The variant was classified as pathogenic based on the following ACMG 2015 criteria: PS3, PS4, PM1, PM2, PM5, PP1, PP2.

Conclusion: The patient is heterozygous for NF1 c.2540T>C, p.(Leu847Pro) variant, which is a known pathogenic mutation. While literature reports have documented instances where punctiform mutations resulted in mild phenotypes, the missense variant observed in this case is associated with severe dermatological and ADHD manifestations of the disease. This severity is attributed to the high conservation of the affected amino acid across mammalian and vertebrate species, indicating a limited tolerance for variation at this position.

ID816 A Novel Mutation in the NF1 Gene of a Patient with Neurofibromatosis Type 1: a Case Report

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Introduction and objectives: Neurofibromatosis type 1 represents a complex genetic disorder that affects multiple systems, with a major impact on the skin and nervous system. This condition frequently precipitates complications ranging from cognitive impairments and skeletal anomalies to the development of malignant tumors.

This article aims to report a case of a 41-year-old female with >20 café-au-lait spots, 3 painless, subcutaneous neurofibromas and freckling in the axillary region, in whom a previously unreported large deletion in the NF1 gene has been identified.

Method: The patient has been tested using targeted sequencing using the The Blueprint Genetics Neurofibromatosis Flex Panel for various genes involved in Neurofibromatosis type 1.

Results: The genetic analysis identified a heterozygous deletion NF1 c.(888+1_889-1)_(1392+1_1393-1) del encompassing exons 9-12 of NF1. This deletion is estimated to cover the genomic region chr17:29527367-29534263 and is at least 6896 base pairs in size.

This variant was classified as pathogenic using the standards and guidelines of the The American College of Medical Genetics and Genomics 2015 (ACMG) based on the following criteria: PVS1, PS4, PM2, PM4, PM6, PP3, PP4. It must be mentioned that the variant has not been reported previously in the medical literature.

Conclusions: The patient is heterozygous for the NF1 c.(888+1_889-1)_(1392+1_1393-1)del, which encompasses exons 9-12 of NF1 and is classified as pathogenic.

Despite the presence of a significant large deletion in the NF1 gene, the patient exhibits a surprisingly mild phenotype, characterized by relatively few and less severe clinical manifestations typically associated with Neurofibromatosis type 1. Notably, the patient has no major complications, maintains normal cognitive function, and enjoys stable overall health.

ID817 Cutaneous Keratinizing Tumors – a Challenging Diagnosis

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Introduction & objectives: Cutaneous keratinizing tumors are challenging to diagnose due to overlapping clinical features. They include malignant conditions like squamous cell carcinoma and basal cell carcinoma, and precancerous conditions such as advanced actinic keratosis and porokeratosis. Porokeratosis, a rare dermatosis with unknown etiology, often appears on sun-exposed skin but rarely on the face as a solitary lesion. It is characterized by disordered keratinization and a histologic hallmark of the cornoid lamella. We present a case of a facial cutaneous keratinizing tumor with porokeratosis features, developing on skin exposed to both sun and radiotherapy.

Case presentation: A 67-year-old Caucasian woman presented with a 7-month history of an asymptomatic, slowly growing, solitary lesion on her left preauricular area, previously exposed to radiotherapy for pituitary adenoma. She had phototype II skin and no history of skin cancer. Examination revealed an annular, poorly-demarcated, red-brown plaque with a depressed center and keratotic rim. Dermoscopy showed a central furrow, scar-like area, and peripheral keratotic ridge with brown dots and fine vessels. A biopsy suggested porokeratosis.

Discussion and conclusion: Diagnosis of keratinizing-looking tumors is sometimes challenging when lesion developed on a combined sun-exposed and radiotherapy field, due to the high risk of developing a skin cancer. Given the peculiar clinical presentation and medical history of this patient, a collision tumor that also contains a malignant keratinizing tumor could not have been excluded based only on incisional biopsy, moreover the porokeratosis itself implies a risk of malignization in the future. Therefore, the optimal approach in this case was complete excision, preferably by a margin-controled technique, given the difficulty to assess the margins of a complex tumor on a radiotherapy and actinic degeneration field. This case is illustrative of the difficulties of clinical, dermoscopical, but also pathological diagnosis in complex situations with multifactorial carcinogenic risk.

ID819 Academic Performance, Self-Efficacy and Somatization in Medical Students: the Role of Early Familial Criticism

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Introduction: Academic performance and self-efficacy can be influenced by early traumas. Identification and exploration of previous traumas can be important not only for their healing, but also for understanding long-terms behavioral patterns derived from them. In the academic environment, potential negative outcomes can be poor academic performance and somatization.

Objective: To explore the associations between self-efficacy, parental criticism, somatization and academic performance.

Materials and methods: 210 medical undergraduate students from "Carol Davila" University of Medicine and Pharmacy (mean age: 22.29 years, SD: 1.926, 84.8% women; 15.2% men) took part in 2022-2023 in the study. Instruments used were Self-efficacy Scale (SES) (Schwarzer & Jerusalem, 1995), Autonom Perceived Parental Autonomy Support Scale (P-PASS) (Mageau et al., 2015), and Somatic Symptoms Scale - Giessener Beschwerdebogen (GBB-24), (Braehler et al., 2000). Statistical analysis included t-tests for independent samples and multiple linear regressions

Results: Mean scores were: for self-efficacy: 29.61 (SD=5.141); for somatization: 30.43(SD=17.447); and for perception of parental support: 97.40 (SD= 12.766).

Women experienced more frequently gastric symptoms (t=3.329; p=0.01) and pain conditions (t=3.805, p=0.016).

Students in the preclinical years felt exhausted more often and more intensely than those in the clinical years (t=1.735; p=0.034).

High-achieving students received more guilt-inducing criticism from their parents than low-achieving students (t=-0.405, p=0.029).

Discussion: Although a certain kind of parental criticism seem to boost motivation, stress education, and increase responsibility and discipline, we should keep in mind that excessive criticism can also increase stress and anxiety. Further research is needed to explore the amount and form of parental criticism which could bring benefits, without creating additional burdens or symptoms.

Conclusion: The findings of our study could help develop personalized interventions and support strategies to promote students' mental and physical health.

ID825 Delayed Diagnosis in Young Patients with UTI-Like Symptoms

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Objectives: To establish the importance of a differential diagnosis between UTIs (urinary tract infections) and STIs (sexually transmitted infections) in the case of young patients with repeated urinary symptoms and negative urine cultures.

Method: A 22-year-old female patient presented with dysuria, hematuria, urinary urgency and lower abdominal pain.

Apart from the urinalysis, which confirmed hematuria and leukocyturia, the blood tests and the ultrasound did not detect anything unusual.

The patient received empirical treatment with norfloxacin.

The patient returned three more times with the same symptomatology, negative urocultures, a normal CT scan and the diagnosis of cystitis with sterile urine was established.

Finally, she was recommended a gynecological consultation, although she denied dyspareunia, abnormal discharge or genital itching.

The bacterial culture taken from the vaginal secretion confirmed the diagnosis of infection with Ureaplasma urealyticum. The patient and her partner received treatment with azithromycin and the symptoms disappeared completely.

Results: Urinary tract problems are often associated with a UTI diagnosis among younger patients.

However, there are bacteria, such as Ureaplasma urealyticum, that can be sexually transmitted and the infection can start with urological manifestations.

Usually, clinicians omit questions related to sexual activity and/or new partners because it is considered a sensitive topic.

The spectrum of the initial antibiotic also covered Ureaplasma spp., and the symptoms disappeared. Unfortunately, the patient was treated for a UTI and continued to get reinfected through sexual contact with the infected partner, eventually acquiring resistance to quinolones.

Conclusions: This case study highlights the need for a differential diagnosis between UTIs and STIs, especially when the patients are young and have frequent urinary symptomatology, but negative urocultures.

Therefore, it is necessary for physicians to address both types of infections because a correct diagnosis and an early treatment prevent the psycho-emotional stress experienced by the patient and antibiotic resistance.

ID827 Seborrheic Keratosis: a Great Imitator of Basal Cell Carcinoma

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Background: Seborrheic keratosis (SK) is a common benign skin tumor often mistaken for cutaneous keratinocyte carcinomas, such as basal cell carcinoma (BCC) and squamous cell carcinoma (SCC). Misdiagnosis can lead to unnecessary tumor removal, high treatment costs, and negative cosmetic and psycho-emotional impacts on patients.

Objective: To enhance the understanding of dermoscopic patterns that differentiate SK from cutaneous keratinocyte carcinomas, thereby reducing false-positive diagnoses.

Methods: This study presents a case report of a 56-year-old male with a newly developed porcelain-white oval macule on the trunk, measuring 1.2 x 0.6 mm with focal pigmentation. Dermoscopic evaluation showed whitish macules with peripheral hyperpigmented structures resembling leaf-like areas or remnants of a cerebriform pattern, with no vascular structures. Given the atypical presentation and the inability to exclude a malignant cutaneous tumor, an excisional biopsy was performed.

Results and conclusion: Histopathological examination confirmed the lesion as a traumatized seborrheic keratosis. Literature data indicates that 21.7% of lesions clinically misdiagnosed as BCCs are actually SKs. Color variability of SKs, from white to black, often leads to suspicions of malignancy, such as BCC or malignant melanoma. Notably, collisions between BCC and SK are the most frequent among benign and malignant tumors, adding complexity to the diagnosis.

Although dermoscopy is a valuable diagnostic tool, its limitations become apparent when SK lesions present atypically or are secondarily injured. To reduce false positives, it is essential to establish new dermoscopic criteria and integrate them with clinical characteristics, medical history, and auxiliary examinations. Enhanced understanding and definition of dermoscopic patterns are crucial for accurately distinguishing between benign and malignant skin lesions, ultimately improving patient outcomes and reducing unnecessary treatments.

ID831 Advantages Based on Intimate Action Mechanism and Clinical Outcomes of Multiwave Locked System (MLS) Laser Therapy for Patients with Post-Burn Pathology

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Objectives: We aim to evaluate the efficacy of MLS LASER therapy in the subacute phase of post-burn pathology, as well as the effectiveness of the applied doses, by monitoring the progression of lesions using standardized assessment scales.

Material and methods: Therapeutic sessions utilizing MLS LASER were conducted within the TEHBA, Neuromuscular Rehabilitation Clinic, adhering to safety protocols to protect both the physician and the patient. A total of 10 MLS LASER therapy sessions were administered, divided into two phases: the first 5 sessions were conducted using specific parameters, followed by the final 5 sessions with increased parameters. The patient was evaluated at both admission and discharge using standardized assessment scales for post-burn pathology, including the Vancouver Scar Scale (VSS), Visual Analog Scale (VAS), 5-D Itch Scale, Manual Muscle Test Scale (MMT), The Barthel Index, Timed Up and Go Test (TUG), and Carmeli Score.

Results: We can objectively observe a considerable improvement in symptomatology and an impressive progression of post-burn lesions, characterized by rapid crust formation and centripetal epithelialization within a short timeframe.

Conclusions: This therapeutic approach holds significant potential to substantially improve patients' recovery period and optimize the comprehensive management of post-burn pathology.

ID834 Diagnostic Dilemmas in the Case of a Young Patient

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Objectives: The medical situation presented aims to draw attention to the persistence of common symptoms in respiratory pathology (cough and dyspnea), which may require further investigations in order to establish a definite diagnosis.

Method: We present the case of a 42-year-old female patient, non-smoker, without exposure to occupational respiratory pollutants, presenting to the pneumology department complaining of dyspnea on minor exertion, irritating dry cough for about a year, nocturnal snoring, and daytime sleepiness. She is hemodynamically stable, with good exercise tolerance, excess adipose tissue represented abdominally, and upon clinical examination, a right submandibular adenopathy is identified, auscultation reveals no bronchial rales.

Results: Among the patient's medical documents, a computed tomography performed one month prior to the current hospital admission indicates the presence of a mildly iodophilic, slightly heterogeneous pulmonary consolidation, which is associated with quasicomplete atelectasis in the right upper lobe and intralesional air bronchogram, as well as the presence of randomly distributed micronodules and semisolid nodules bilaterally. Imaging is repeated and no significant changes are noted compared to the previous examination.

The fibrobronchoscopic examination does not provide significant information for the medical investigation, with a bronchoalveolar lavage performed in which rare groups of lysed cells with nuclear-cytoplasmic atypia are observed. No bacterial and fungal infections identified in bronchial aspirate.

Facing diagnostic difficulties, the patient undergoes a right lung biopsy in the thoracic surgery department, where extemporaneous examination raises the suspicion of carcinomatous infiltrates.

Prior to the thoracic surgery intervention, the patient undergoes a sleep study which excludes a sleep disorder; however, nocturnal pulse oximetry draws attention to the fact that she presents frequent desaturations, with oxygen saturation oscillations between 75% and 98%.

Conclusions: Non-mucinous lepidic adenocarcinoma has the ability to mimic infectious and inflammatory diseases in both patient presentation and diagnostic imaging which can result in a delayed diagnosis.

ID838 Interesting Findings in a Patient with Vasospastic Angina

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Objectives: To establish correct stratification of chest pain in patients with cardiovascular risk factors and the importance of complex assessment regarding syncopes.

Methods: A 66-year-old female patient presented to the emergency room following a cranial trauma from a fall on the same level, preceded by rapid heartbeat, thoracic pain and shortness of breath. A CT-scan revealed the absence of cerebral hemorrhage/infarction and myocardial cytolysis enzymes had normal values (i.e first determination: hs-cTnI: 2.99 ng/L, CK-MB: 1.6 ng/mL, followed by a second determination 2 hours later: hs-cTnI: 3.15 ng/L, CK-MB: 1.3 ng/mL. 12-lead ECG showed sinus rhythm, with left axis deviation, 108 HR and ST-elevation in lower leads (D2, D3, aVF). The patient was quickly transferred to a catheterization laboratory in order to evaluate the severity of coronary stenosis. Results were disappointing because the right coronary vessel had only a 20-30% stenosis located in segment I with no hemodynamic impact.

Results: 12-lead ECG after admission revealed typical atrial flutter, predominantly with 3:1 block, although the block varied. 24h ECG monitoring showed an average HR of 108 bpm, maximum HR of 130 bpm, and presence of atrial flutter most of the time.

Transthoracic echocardiography brought to light a severe pulmonary hypertension (PAPs - 80 mmHg), severe tricuspide valve regurgitation and mild mitral and aortic valve regurgitation.

Transesophageal echocardiography disclosed an atrial septal defect with positive Bubble test and no signs of left auricle thrombosis.

The patient's symptoms initially responded well to increasing Verapamil doses, but the arrhythmia persisted. Due to lower systolic pressure, the medication was switched to amiodarone for cardioversion.

Conclusions: This case study highlights the need for a differential diagnosis between vasospastic angina and myocardial infarction and the correct assessment of syncope etiologies. Arrhythmias can overlap with iatrogenic hypotension and trigger symptoms compatible with many causes of thoracic pain.

ID839 The Impact of Device-Assisted Therapy in Advanced Parkinson's Disease: a Case Series

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Introduction: Pump-based Parkinson therapies, such as subcutaneous apomorphine infusion and levodopa-carbidopa-entacapone intestinal gel, are among the most effective pharmacological treatments available for advanced Parkinson's disease. These therapies provide a more consistent delivery of dopaminergic medication, resulting in a more stable therapeutic effect.

Objectives: This paper aims to highlight the effects of levodopa-carbidopa-entacapone intestinal gel in three cases of patients with advanced Parkinson's disease.

Material and Methods: We present three patients, two males and one female, aged between 72 and 84 years, admitted to the Neurology Department with advanced Parkinson's disease. The disease had been diagnosed between 10 and 16 years prior to the current presentation. The patients exhibited motor complications (wearing-off, delayed-on, no-on, unpredictable off periods) and non-motor symptoms (anxiety, memory impairment, paresthesia, constipation, orthostatic hypotension). Each patient used five or more doses of levodopa daily, spent over two hours in the off state, and two of them experienced troublesome dyskinesia. Device-assisted therapy was recommended for all patients. Following the initiation of this therapy, all patients underwent a rehabilitation program including physical-kinetic treatment, massage, virtual therapy, and stabilometric exercises.

Results: Post-initiation of pump treatment, most of the motor symptoms improved, particularly akinesia and dyskinesia periods. The neurorehabilitation program further enhanced these results and contributed to their persistence over time.

Conclusion: Compared to oral treatment, continuous delivery of levodopa-carbidopa-entacapone intestinal gel demonstrates superior effectiveness by reducing the duration of the off state, the on-time with troublesome dyskinesia (TSD), increasing on-time without TSD, and improving UPDRS and PDQ-8 scores, thereby enhancing the quality of life for patients.

ID840 COGNET – Study on the Influence of Internet Usage Among Older Adults' Cognitive Function

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Introduction: There are studies that suggest active usage of the internet could be beneficial among older adults for maintaining and improving cognitive function. Access to information and socializing using the internet has become easier for older adults, thus contributing to a lower prevalence of isolation among older adults.

Materials and methods: We elaborated a questionnaire that evaluates the use of the internet among older adults. Our study included 20 older adults (15 females and 5 males) with the age of 60 and above (average age 74.6 years), admitted to the Geriatrics department of the "Saint Luke" Hospital of Chronic Diseases in Bucharest, Romania. We have excluded patients who had functional decline at the level of the hands and patients that did not have access to internet connection. All patients have signed an informed consent form before being included in the study. We made our evaluation based on the Mini-Mental State Examination (MMSE) in 2024 compared with the MMSE from 2023.

Results: The findings showed that the usage of internet between one and three hours daily for socializing, reading and learning activities may have a positive effect on the preservation and improvement of cognitive function at 71.43% of the internet users based on their MMSE evolution from 2023 to 2024 (28.57% with an improvement of 2 points MMSE), impact being greater at the population over 70 years old. At the same time usage of over 3 hours has been shown to have a negative effect on cognitive function at 7.14% of the internet users.

Conclusions: We have observed during our practice in the Geriatrics department, an improved MMSE score for the internauts, compared to those who were not using the internet. This comes to emphasize the importance of digital literacy for improving and maintaining a good cognitive function.

ID844 The Prevalence of Metabolic Syndrome in Elderly Patients with Type 2 Diabetes

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Introduction: In the last decades, metabolic syndrome has become one of the most widely spread chronic diseases associated with aging, becoming a global public health burden. Research suggests that in most countries, metabolic syndrome prevelance reaches 20-25% in the elderly. It has been demonstrated that metabolic syndrome precedes or accompanies type 2 diabetes mellitus.

Materials and methods: A cross-sectional study was conducted on 100 geriatric patients with type 2 diabetes, admitted to the Geriatrics Department of "Sf. Luca" Chronic Disease Hospital - December 2023 to May 2024, in order to evaluate metabolic syndrome distribution.

Results: This pool of selection gathered individuals aged between 65 to 94 years, with the majority over 75 (52%), 76% female and 24% male. Our study indicated a high prevalence of metabolic syndrome among individuals aged 70-74 years. Obesity, a major criteria that defines metabolic syndrome has been identified in a similar distribution pattern, peaking in the 70-74 age group. The uneven distribution of metabolic syndrome between the sexes, skewing towards the female population rather than male (36% vs 12%) confirms existing data. Furthermore, there was significant difference between populations, with metabolic syndrome identified in 26% of diabetics from urban areas versus 18% individuals from rural areas. In stark opposition, from those without diabetes, in urban areas, only 76.4% had metabolic syndrome, versus 85.7%.

Conclusion: The over-representation of women with both type 2 diabetes and metabolic syndrome is probably a result of the accelerated complications of diabetes potentially enhanced by post-menopausal hormonal changes, lack of excercise and a high-calorie diet. In addition, urbanisation and a western lifestyle as a source for high blood glucose, insulin resistance and reduced exercise are confirmed by nuanced differences between patients from rural vs urban areas, indicating a clear influence of the environment over the natural evolution of metabolic syndrome.

ID845 The Role of the Nurse in HPV Vaccination

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Introduction: In 2022, there were more than 661,000 cases of cervical cancer and over 348,000 deaths from this cause worldwide, ranking it as the fourth most common cause of cancer and cancer death among women. Romania ranks second in Europe, after Montenegro, in both incidence and specific mortality rates. The incidence rate of cervical cancer is more than twice the European average, and the mortality rate is three times higher. Globally, without preventive and control interventions, the number of annual deaths caused by cervical cancer could exceed 400.000 by 2035.

Currently, in Romania, specific measures for the prevention of cervical cancer include a national screening program (for women aged 25 to 64 who have not had a previous diagnosis of cervical cancer or other known lesions) and a national HPV vaccination program (for girls and boys aged 11 to 18). The screening program is optional and does not involve sending invitations, while HPV vaccination is available through family doctors. The vaccine is not mandatory and is not part of the mandatory national vaccination schedule, but it is offered free of charge until the age of 18 for both girls and boys, requiring a request and parental consent for administration.

Purpose: The purpose of this study is to evaluate the knowledge, attitudes, and practices regarding human papillomavirus infection among individuals aged 25 to 45, in order to formulate a set of recommendations and suggestions and to identify the role of the nurse in promoting HPV vaccination.

Material and method: A cross-sectional descriptive study was conducted in Romania among individuals aged 25-45. Data were collected through a self-administered questionnaire, with informed consent obtained from each respondent. The questionnaire was administered online using the cloud-based Google Forms platform and was available on the internet for two months, from March to April 2024. The questionnaire was distributed through various media channels, both individually and in communication groups, in the form of a link. The questionnaire comprises 30 questions and is divided into four categories:

1. Data on the socio-demographic profile of participants (5 questions).
2. Questions about knowledge of HPV and the consequences of HPV infection, as well as knowledge about vaccination (14 questions).
3. Information on participants' sexual behavior and prevention practices regarding sexually transmitted infections (3 questions).
4. Questions regarding participants' attitudes towards HPV (8 questions).

Results: Of the 498 respondents, 86% are from urban areas, the majority are female (70%), 64% have completed higher education, and 63% do not work in the medical field. Eighty-four percent stated that vaccination is very important in preventing HPV infection. Forty percent are unaware that the HPV vaccine can be administered up to the age of 45. Fifty-seven percent of respondents in both age categories indicated that sexual intercourse is the most common mode of transmission of the virus; additionally, a very high percentage, 94%, are aware of the main risk factors for cervical cancer.

Conclusions: It is important to assess the population's level of knowledge regarding HPV, the associated risks and complications of infection, the existence of the vaccine, and the age limits for vaccination. By gaining a deeper understanding of these aspects, we can develop effective communication and intervention strategies that contribute to increasing the vaccination rate and, consequently, reducing the incidence of HPV infections and associated diseases. Nurses have an excellent opportunity to promote immunization among the population and to encourage and motivate people to protect themselves against infectious diseases.

ID846 The Role of the Nurse in the Prevention of the Most Common Maternal-Fetal Infectious Diseases

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Introduction: Perinatal infection is caused by microbial agents transmitted from the mother to the fetus or newborn during pregnancy (transplacental, antenatal), during birth (perinatal), or after birth (postnatal). The TORCH testing panel is recommended before conception, but if the pregnancy is unplanned, it can be performed in the first weeks of pregnancy.

Purpose: The purpose of this study is to determine women's knowledge regarding the most common maternal-fetal infectious diseases, their modes of transmission, prevention, and diagnosis, in order to identify the role of the nurse in the prevention of these infections.

Material and method: This is a descriptive study conducted on a sample of 107 women aged over 18 years. Data were collected through a self-administered questionnaire, with informed consent obtained from each participant. The questionnaire consists of 25 closed-ended questions. The response options are preformulated, allowing for the selection of a single answer or multiple answers, with „yes", „no", or „I don't know" responses. The questionnaire was administered between December 21, 2023, and April 16, 2024. Responses were individual, and confidentiality was ensured.

The questionnaire was created using Google Drive's Forms application, analyzed, and centralized with Microsoft Excel and Forms application.

Results: Over half of the respondents (68.2%) are aged between 18 and 28 years. The majority (76.6%) had heard of the TORCH testing panel before becoming pregnant. Most women (97.2%) know that the role of prenatal screening is to identify potential fetal problems early. Over half of the respondents are unaware of the vaccines permitted during pregnancy, and 10.3% do not know of any vaccines. 66.4% of the women participating in the study are vaccinated against hepatitis B.

Conclusions: The prevention of infectious diseases includes activities aimed at preventing the onset and manifestation of the disease. Introducing free TORCH panel testing could significantly enhance the accessibility and uptake of crucial prenatal screenings, leading to better maternal and child health outcomes. By eliminating financial barriers, increasing early detection and intervention, and integrating this testing into comprehensive public health strategies, healthcare systems can reduce the incidence of maternal-fetal transmitted infections. Nurses and other healthcare providers play a vital role in promoting and facilitating this preventive measure, ensuring that expectant mothers receive the best possible care.

ID851 Multifaceted IL-12 Cytokine Family in Autosomal Dominant Polycistyc Kidney Disease

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Objectives: Autosomal Dominant Polycystic Kidney Disease (ADPKD) is an inherited, complex disease, characterized by cysts formation in many organs. ADPKD physiopathology was intensively studied during the last years, mainly, the involvement of proinflammatory chemokines in kidney disease progression. We aimed to explore the IL-12 interleukin family members profile in relation with eGFR decline and inflammation in ADPKD.

Method: We developed a prospective, case control study, that included 53ADPKD subjects (53.4 years old, men: women 28:25), and 30 healthy subjects, similar as sex and mean age. The study included ADPKD subjects diagnosed by familial history, clinical exam and CT or MRI scan, only with kidney determination, with eGFR>60mL/min/1.73mp. History of hematuria, cysts infection, urinary tract infection, renal lithiasis, with unstable blood pressure in the last 6 months were exclusion criteria.

We assessed the serum levels of monomers IL-12 (p40 and p35) and heterodimers (IL-12 p70, IL-23, IL 35) by ELISA method and inflammatory markers (CRP, orosomucoids) by immunoturbidimetry. All the results were statistically analyzed using IBM SPSS Statistics 2015.

Results: In ADPKD patients, all IL-12 cytokine family members were overexpressed. IL-12p35 and IL-35 correlated negatively with IL-12p70, IL-23 and IL-12 p40. When analyzing the relation of IL-12 family members with eGFR, we detected a positive correlation of IL-12 p35 and IL-35 with eGFR, respectively a negative one between IL-12 p70, IL-23 and IL-12 p40 and eGFR. Related to inflammatory markers, IL-12p35, IL-35 and IL-12 p40 were negatively associated with CRP and orosomucoids, while IL-12p70 and IL-23 were positively associated with CRP and orosomucoids.

Conclusions: IL-12 cytokine family members were overexpressed in ADPKD subjects, with divergent actions in inflammation. ADPKD is a cellular source of IL-12, a cytokine produced by antigenic stimulation. IL-12 could potentially play a role in pathogenesis and clinical characteristics, in monitoring and individualized management of ADPKD.

ID853 The Impact of Pregnancy on the Quality of Life of Pregnant Women in Romania

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Introduction: Researching the quality of life of pregnant women is important for analyzing the life context and the factors that influence quality of life during pregnancy, as it helps identify the most vulnerable groups that need more attention. Understanding the quality of life of pregnant women is crucial because those with lower quality of life experience more complications during pregnancy. Such complications require treatments that cause additional stress.

Objective: The aim of this study was to describe the perception of the changes brought by pregnancy, including the impact of these changes on quality of life, and to determine the variables that, from the perspective of pregnant women in Romania, significantly affect their quality of life. Additionally, it aimed to examine the properties of the generic WHOQOL-Bref questionnaire and to determine if it is sufficiently sensitive to provide an optimal assessment of the quality of life of these women.

Material and method: A descriptive, cross-sectional study was conducted in Romania among pregnant women from the general population. Data were collected through a self-administered questionnaire, with informed consent obtained from each participating pregnant woman. The study consisted of the following stages:

1.A consistency analysis of the entire questionnaire was conducted, followed by a separate analysis of the four domains. Subsequently, a confirmatory factor analysis was performed for the proposed four-domain structure: Physical, Psychological, Social Relationships, and Environment.

2.Transformed scores on a scale of 0-100 were calculated for each domain of the questionnaire.

3.Domain scores were compared across different demographic and clinical variables using ANOVA tests followed by post-hoc ANOVA procedures or two-way Welch T-tests.

Results: A total of 1567 individual responses were collected. We excluded 17 participants due to incomplete responses. After validating the test, 1550 participants remained. The analysis of the socio-demographic and obstetric profile of the pregnant women revealed that approximately half, 760 (49.03%), of the participants were aged between 18-29 years, and 1170 (75.48%) were married. In our group of 1550 pregnant women, 1270 (81.93%) had higher education, 1240 (80%) had a regular job, and the vast majority, 1499 (96.70%), were of Romanian ethnicity. Two-thirds of the survey participants lived in an urban area, 1090 (70.32%); 510 (32.90%) had attended childbirth education classes, and 1130 (70.90%) were in the third trimester of pregnancy. 160 (10.32%) of respondents did not want to give birth in a hospital, and 20 (0.12%) had more than five previous births.The results showed good consistency for the entire questionnaire and for each domain separately. Although scores in all domains were higher among urban pregnant women, the differences were not statistically significant. The difference of 15.873 in the Psychological domain score between women with higher education and those with a maximum of middle school education was statistically significant. Analyses for the presence of previous births, the trimester of pregnancy, participation in childbirth preparation classes, the chosen mode of delivery for the current pregnancy, and the chosen place of birth showed no statistically significant differences.

Conclusions: The results of this study highlight the need for implementing actions to expand the support and care network for women. These actions should include health programs dedicated to women, especially those with more children, lower economic status, and lower education levels, to provide them with conditions for improving their quality of life

ID855 Exploring Factors Influencing Pregnant Women's Perceptions and Attitudes Towards Midwifery Care Implications for Maternal Health Education Strategies

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Introduction: Romania has the highest maternal and infant mortality rates in Europe, as well as high rates of unsupervised pregnancies and teenage pregnancies. This regrettable position highlights the suboptimal quality of healthcare services in this domain and the fact that the Romanian healthcare system fails to provide effective primary care in this area. All countries with favorable indices in this field provide preventive and specialized services based on midwives.

Purpose: The purpose of this research is to investigate whether there are demographic and clinical factors that influence pregnant women's perceptions of the midwife's role during pregnancy, childbirth, and the postpartum period.

Material and method: Data were collected through a self-administered questionnaire, with informed consent obtained from each pregnant participant. The questionnaire was administered online using the Google Forms platform and was available on the internet for seven months, from January to July 2023.

A total of 1,319 individual responses were collected. We excluded 18 participants due to incomplete responses. After validation, 1.301 participants remained.

A total score was calculated for the following questions:

- Are you aware of the services that midwives can provide during pregnancy, childbirth, and the postpartum period? (Possible score range: 0 - complete lack of knowledge to 2 - sufficient information).
- In your opinion, would access to a midwife during pregnancy, childbirth, and the postpartum period be helpful? (Scoring identical to the previous question).
- On a scale from 1 to 10 (where 1 is the least important and 10 is very important), how important do you consider the midwife's role in the stages of pregnancy, childbirth, and the postpartum period? (Score is based on the scale).

The total possible score ranges from 1 (the patient is completely uninformed about the midwife's role during pregnancy/childbirth/postpartum or considers the role unimportant) to 14 (the patient is fully aware of the midwife's role during pregnancy/childbirth/postpartum).

The total score obtained was compared to subsets of patients determined by their demographic and clinical characteristics.

Results: Women place more importance on the role of the midwife if they are older, married, and have a higher level of education. Women placed less importance on the midwife if they did not attend childbirth education courses and if they had not experienced childbirth.

Conclusions: To address the urgent need to reduce the cesarean section rate and improve obstetric standards, it is crucial to focus on educating and preparing women for childbirth. Midwives, who are directly involved in the care of pregnant women and their families, represent an invaluable resource in achieving this goal.

ID856 Comparative Analysis of Survival in Hemodynamically Unstable Ventricular Arrhythmias: Reversible vs Irreversible Etiologies

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Background: Secondary prevention has improved the survival of patients experiencing haemodynamically unstable ventricular arrhythmias (VA). ICD use in secondary prevention is recommended for patients without a reversible cause. However, the definition of „reversible cause" remains ambiguous, particularly in the context of contemporary management of ischemia and heart failure.

Aim: To evaluate the survival outcomes of patients admitted with haemodynamically unstable VAs, stratified by the presence or absence of a reversible cause.

Methods: We conducted a retrospective analysis of patients admitted to a tertiary care centre with hemodynamically unstable ventricular tachycardia (VT) or ventricular fibrillation (VF) between 2018-2021, who survived the initial admission. Clinical, demographic, and the presumed substrate of the VA were collected. The primary endpoint was cardiovascular mortality.

Results: We included 156 patients, of whom 79% were male, with a mean age of 62±12 years at admission. From the study cohort, 64.7% patients had a reversible cause, and 35.3% patients had an irreversible cause. The main reversible causes were acute ischemia (91%), severe electrolyte imbalance (3%), myocarditis (2%) and proarrhythmic effect of antiarrhythmic medication (1%). Ischemic cardiomyopathy was prevalent in both groups, but significantly higher in the reversible cause group (91% vs 70%, p=0.03). Although the LVEF was higher in the reversible cause group, the difference was not statistically significant (38±9% vs 35±13%, p=0.09). Both groups had a similarly high burden of cardiovascular risk factors and similar use of modern-day treatment options.

The mortality was non-significantly higher in the reversible cause group (23% vs 18%, Chi square 0.464, p=0.49).

Conclusions: In a contemporary cohort of patients managed at a tertiary care centre according to current guidelines, those with hemodynamically unstable VAs and a reversible cause had a high cardiovascular mortality. Further prospective studies are needed to optimize the management of patients with what is currently considered a reversible cause of VAs.

ID857 Arterial Hypertension and Cardiovascular Risk Assessment in Elderly Patients

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Objectives: Cardiovascular risk factors analysis (obesity, sedentary lifestyle, hypercholesterolemia, diabetes), and the highest frequent complications of hypertension (HBP) in the elderly patient: carotid atherosclerosis, peripheral arterial disease (PAD), chronic kidney disease (CKD), chronic coronary syndrome (SCC), stroke.

Methods: retrospective study, 49 patients, aged 62-92 years, with HBP, hospitalized in the Geriatrics Clinic of the "Sf. Luca" Chronic Disease Hospital Bucharest. Analysed variables: age, sex, environment of origin, body mass index (BMI), lipid profile (Chol T, LDLc, HDL c), diabetes, estimated glomerular filtrate rate (eRFG), carotid atherosclerosis, ankle-brachial index (IGB), functionality: Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), and nutrition (Mini Nutritional Assessment, MNA).

Results: mean age: 74.43 years (SD=7.329), young elderly patients (65-74 years) 57.1%, and elderly patients (75-84 years) 22.4%, 85.7% female, 69.4% urban environment. Most of the analyzed patients have HBP stage 3 – 59.2%, followed by stage 2 – 38.8%. CKD stage G2 is associated in 69% of patients, and CKD stage G3 in 20.4% patients. HBP stage 3 associates CKD stage G2- 38.78% and CKD stage G3-16.33%. 55.3% are obese, 34% have degree 1 obesity. . Hypercholesterolemia is found in 79.59%, and 44.9% is associated with type 2 diabetes. 51.02% have carotid atheromatosis, 30.61% in patients with HBP stage 3 and 20.41% in stage 2. BMI correlates statistically significantly positively – Pearson's correlation (p=0.002, r=0.436) with hypercholesterolemia (HDLc). Elderly with HBP lose their functionality as they age, negative Pearson's correlation (r=-0.521, p<0.001).

Conclusions: The elderly hypertensive patient frequently presents multiple cardiovascular risk factors, which cumulatively increase the cardiovascular risk and negatively influence the elderly's functionality. This pilot research may be the beginning for future studies exploring methods of cardiovascular prevention by controlling risk factors with multifactorial interventions of nutrition, physical exercise, and education programs.

ID858 Staphylococcus Aureus in Pediatric Patients Admitted to an Emergency Hospital from 2018 to 2023

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Objectives: Staphylococcus aureus, particularly methicillin-resistant strains (MRSA), poses a significant public health challenge, causing severe infections in pediatric individuals. This retrospective study aims to evaluate the rate of positive samples for S. aureus in an emergency hospital for children in Bucharest, Romania, from 2018 to 2023 and analyze trends in antibiotic resistance.

Materials and methods: Data were collected from annual microbiology laboratory reports, including total samples, positive samples for S. aureus and MRSA, and antibiotic resistance patterns. Tests were performed for invasive infections and for detecting nasal carriers, especially in patients admitted to the intensive care unit or surgical wards, based on the hospital's testing protocol. Analysis was performed using Microsoft Excel and MedCalc. Results were expressed in values and percentages, with the threshold for statistical significance set as less than 0.05.

Results: The number of positive samples for S. aureus fluctuated, peaking in 2019 (1776 positive samples) and significantly decreasing in 2020 (324 positive samples). The MRSA outbreak in a Maternity Hospital in Bucharest contributed to the high number of positive samples in 2019. The percentage of MRSA-positive samples consistently decreased from 57.4% in 2018 to 23.3% in 2023 ($p < 0.05$). Antibiotic resistance analysis showed a decrease in Penicillin G resistance from 93.5% in 2018 to 78% in 2023, with maintained sensitivity to Vancomycin and Teicoplanin. The number of positive blood cultures decreased from 12 in 2018 to 5 in 2023. The analysis of MRSA blood cultures from 2018 to 2023, also showed a significant decrease from 6 cases in 2018 to 2 cases in 2023.

Conclusions: Positive samples for MRSA showed a decreasing trend during the study period. The antibiotic resistance of S. aureus identified in children's samples, decreased over time. Future studies are needed to evaluate the interventions in pediatric population.

ID860 Acute Effects of Incremental Doses of Intravenous Ajmaline on ECG Intervals – a Pilot Study

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Background: Ajmaline challenge is used to unmask type 1 Brugada pattern in selected patients. Acute impact of intravenous (iv) ajmaline on ECG parameters is a known side effect and reason for termination of this challenge, thus merits further investigation.

Aim: To measure the effect of standard ajmaline challenge on 12-lead ECG intervals in incremental dose steps.

Methods: We performed iv ajmaline challenge at standard dose of 1 mg/kg over 10 minutes, with ECGs performed at baseline and at each 20% dose increment. Test group consisted of 6 patients (1 woman), with indications: 5 for unexplained syncope and 1 resuscitated cardiac arrest without cause.

Results: All patients received full target dose without significant adverse effects. Only 1 out of 6 tests (17%) was diagnostic for Brugada type 1 pattern. There was no significant difference in heart rate, QRS axis or QTc interval after ajmaline compared to baseline.

P wave duration increased with ajmaline dose, differing significantly from 60% of target dose (123.3±8.2ms at 60% vs 106.7±16.3ms at baseline, $p=0.042$), but remained stable thereafter (123.7±8.2ms at 100% vs 123.3±8.2ms at 60%, $p=0.175$).

PR interval increased with ajmaline dose, differing significantly from 40% of target dose (176.7±15.1ms at 40% vs 153.3±10.3ms at baseline, $p=0.001$), then increased slightly without statistical significance (189.3±23.6ms at 100% vs 176.7±15.1ms at 40%, $p=0.094$).

QRS duration increased with ajmaline dose, differing significantly from 60% of target dose (120.0±31.0ms at 60% vs 106.7±27.3ms at baseline, $p=0.025$), then increased slightly without statistical significance (130.0±35.2ms at 100% vs 120.0±1.0ms at 60%, $p=0.076$). Average QRS prolongation at 100% dose was 121.7±2.6% from baseline.

Conclusion: Prolongation of P wave, PR interval and QRS duration were confirmed in our study, with specific dynamics. These effects of iv ajmaline were apparent from 40-60% of the target dose and need careful monitoring during the test.

ID868 The Balance between Intervention and Moderation

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We report the case of an 81-year-old female patient that was admitted in our Intensive Care Unit (ICU) for acute respiratory failure supposedly associated with acute edematous pancreatitis.

Two days prior to ICU admission, the patient had an ST-segment elevation myocardial infarction. She initially received thrombolysis and then was transferred to a tertiary cardiology center, where angioplasty with a drug-eluting stent of the anterior descending artery was performed. Post-angioplasty, the pain persisted, and the clinical status worsened, the patient developing acute respiratory distress syndrome.

At admission in the ICU, the patient was expressing radiating pain to the right hypochondrium, subxiphoid area and the left arm. Signs of respiratory distress were present, imposing the necessity for controlled mechanical ventilation. The laboratory tests showed increased levels of pancreatic amylase (146 U/l), lipase (291 U/l), moderate hepatocellular injury (ALT 111 U/l, AST 108 U/l) and hyperleukocytosis (WBC 31.90*10 ^{3}/uL). Regarding the severity scores, the SOFA score was 6 points (mortality <33%), APACHE II 19 points (expected mortality 29%), Atlanta Classification for pancreatitis–moderate and RANSON Score 4 points.

The initial work-up consisted of abdominal echography, thoraco-abdominal CT (confirming important peripancreatic edema, but without visible calculus) and ERCP – biliary passage present, but multiple trials to access the ampulla failed due to severe spasm. Thus, taking into consideration the patient was under dual antiplatelet therapy, conservatory management was employed, but nonetheless, the placement of a naso-jejunal tube was decided. Enteral nutrition was commenced after performing NUTRIC-Score, NRS-2002 and according to the patient's biological requirements (BMI/BSA/BEE/TDEE). Concomitantly, diagnostic assessment was completed with magnetic resonance cholangiopancreatography that confirmed the absence of calculus.

In the following days, the patient developed sepsis and required increasing dosages of vasoactive support. Nonetheless, with invasive arterial catheter monitoring, ventilatory support, nutritional support and multidisciplinary collaboration, 23 days later, the patient was discharged.

ID870 Management of Complex Enteral Fistula after Surgical and Oncologic Treatment

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Objectives: The primary objective of this case study is to document and evaluate the clinical evolution, treatment responses, and complications encountered by a 57-year-old female patient with stage IIIC ovarian neoplasm. This study emphasizes the importance of a multidisciplinary approach and personalized nutrition in the management of complex cases. The aim is to understand how coordinated care and tailored nutritional support can improve treatment outcomes and patient quality of life.

Methods: The patient's clinical history from March 2021 to November 2023 was meticulously documented, focusing on surgical, medical, and nutritional interventions. Initial treatment included a complex surgical procedure followed by chemotherapy. The patient's condition was monitored using imaging studies (CT and MRI) to assess treatment effectiveness. A multidisciplinary team, including oncologists, surgeons, infectious disease specialists, and intensivist, coordinated the treatment.

Results: This approach initially resulted in a favorable response, however, recurrent complications such as intestinal occlusion and fistula formation required additional surgeries and intensive care. The patient experienced multiple infections treated effectively with antibiotics. Nutritional interventions played a crucial role in supporting recovery and maintaining the patient's strength, especially post-surgery and during chemotherapy.

Conclusions: This case highlights the critical role of a multidisciplinary approach in managing advanced ovarian neoplasm, where coordinated efforts of various specialists can address complex complications efficiently. Personalized nutrition significantly contributed to the patient's recover, underlining its importance in cancer patients treatment. This case demonstrates that well-coordinated multidisciplinary care, combined with personalized nutrition and adequate nursing can improve outcomes and enhance the quality of life for cancer patients.

ID874 Assessment of Nitrosative Stress Markers in Patients with Cutaneous Lichen Planus

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Background: Lichen planus (LP) is a condition with an unknown etiology. However, most studies suggest that its pathogenesis involves T cells, leading to its classification as a T cell-mediated autoimmune disease. In autoimmune diseases, there is an increase in reactive oxygen species (ROS) and reactive nitrogen species (RNS), highlighting the strong connection between the immune system and oxidative/nitrosative stress.

Methods: We conducted a case-control study on 40 patients with cutaneous lichen planus (CLP) versus 40 healthy controls to investigate nitrosative stress levels. We determined the following serum markers: nitric oxide metabolites – direct nitrite, total nitrite, nitrate - and symmetric dimethylarginine (SDMA), an indirect inhibitor of NO. For each patient we calculated the body surface area (BSA) affected by LP.

Results: We found significantly higher serum levels of direct nitrite, total nitrite, nitrate and SDMA in CLP patients compared to healthy controls ($p<0.01$). There were no statistically significant correlations between BSA and the studied markers, except for the positive correlation with serum nitrate levels (r-0.38, p-0.013).

Conclusion: Our findings indicate that in CLP patients there are high levels of nitric oxide metabolites and SDMA, which may represent important players in LP pathogenesis.

ID884 Rapid Escalation from Localised ENT Granulomatosis with Polyangiitis to Cranial Nerve and Pulmonary Involvement

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Objectives: Granulomatosis with polyangiitis (GPA) is a multisystemic vasculitis of small-size vessels with a predilection for the upper and lower airways and kidneys. Nevertheless, central nervous system (CNS) can be involved as well and can have extremely heterogeneous manifestations.

Materials and methods: Case presentation.

Results: A 54-year-old female patient with a history of ovarian cancer and conjunctival melanoma 15 years ago, was transferred from the ENT department. She presented with bloody nasal discharge, dysphonia, tinnitus and bilateral hypoacusis. The symptoms had been insidious for 6 years but escalated in the last month. ENT exam pointed out nasal crusts, inferior nasal turbinate hypertrophy and subglottic stenosis. Blood tests showed inflammatory syndrome and positive c-ANCA. Nasal mucosa biopsy confirmed the diagnosis of GPA. Chest CT revealed right upper lobe pulmonary fibrosis. Pulse therapy with methylprednisolone (MP) followed by slowly tapered corticosteroids and azathioprine (AZA) at home led to rapid clinical resolution. She soon discontinued AZA due to a hypersensitivity cutaneous reaction. One month later she was reevaluated in the neurology department for severe headache, malaise, and left-sided tongue palsy. Cranial MRI illustrated perineural infiltration of the left hypoglossal and recurrent laryngeal nerve. Chest CT identified two cavitary lung nodules in the left middle lobe. Tuberculosis was excluded with a GeneXpert test. During hospitalization she experienced a mild form of COVID, so only antibiotics and oral MP were used. Three weeks later, considerable decrease of the lung nodules and almost complete clinical remission of the cranial nerve palsy were achieved. The patient received the first administration of CYC and will be re-assessed in one month.

Conclusions: CNS involvement of the GPA is not that rare as thought and is associated with a high frequency of refractory disease course, so this requires a fast diagnostic work-up and therapeutic intervention.

ID885 Progressive Pseudorheumatoid Dysplasia: a Rare Mimicker of Juvenile Idiopathic Arthritis

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Objectives: Progressive pseudo rheumatoid dysplasia (PPRD) is a rare autosomal recessive disorder characterized by articular cartilage degeneration causing joint stiffness, abnormal gait and significant morbidity. Its prevalence is estimated as one per million but the disease remains underdiagnosed mainly due to the overlap features with juvenile idiopathic arthritis (JIA).

Materials and method: Case presentation.

Results: A 17-year-old short stature boy diagnosed with rheumatoid factor negative polyarticular JIA at the age of ten was referred to rheumatology for a second opinion. His main complaints were mechanical pain, tumefaction and restricted range of movement of the left knee. Knee aspiration with intra-articular corticosteroid injection had been repeatedly performed over the last year. He had undergone treatment with methotrexate and corticosteroids for 7 years, without therapeutic benefit. Clinical exam revealed also thoracic kyphosis, right clubfoot, flexion deformity of the right knee, ankylosis of hips, limited mobility of the spine and camptodactyly. Laboratorial workup resulted in normal inflammatory markers, negative anti-citrullinated protein antibodies and HLAB27 test. Further tests pointed out minimal synovial proliferation of the left knee and normal magnetic resonance aspect of the sacroiliac joints. X-rays showed epiphyseal enlargement of the proximal phalanges and platyspondyly with anterior beaking in the lumbar vertebrae. PPRD was suspected so a skeletal dysplasia panel was performed, identifying a compound heterozygous pathogenic mutation of CCN6 gene. Disease modifying drugs and corticosteroids were stopped. Supportive treatment and orthopaedic follow-up were indicated.

Conclusions: PPD usually manifests in early childhood with symmetric polyarthralgia with non-synovial swelling of the interphalangeal joints, elbows, knees and ankles. The pattern recognition of this rare skeletal dysplasia is crucial for early appropriate management.

ID890 Serum Vitamin D Levels and Frax Score Screening in Romanian Older Adults

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Introduction: Osteoporotic fractures pose a significant public health concern, particularly among older adults. Vitamin D is essential for calcium absorption and maintaining bone health, its deficiency increasing fracture risk due to weakened bone structure. Globally, about 1 billion people suffer from vitamin D deficiency. This study examines the relationship between serum vitamin D levels and osteoporotic fracture risk in the elderly.

Materials and methods: A cross-sectional study was conducted on 80 geriatric patients admitted to the Geriatrics Department of Chronic Hospital "St. Luke" in Bucharest from January to March 2024. The study assessed serum vitamin D levels, demographic data, and FRAX scores for fracture risk.

Results: The mean age of participants was 72.4 ± 7.42 years, with 83.75% being female. For patients over 75 years, the mean vitamin D level was 25.30 ± 15.96 ng/mL, compared to 28.27 ± 12.18 ng/mL for those under 75 years. A significant negative correlation was found between serum vitamin D levels and hip fracture risk in patients over 75 years ($r = -0.5213$, $p = 0.0037$) and between serum vitamin D levels and major osteoporotic fracture risk ($r = -0.387$, $p < 0.028$). In patients under 75 years, a significant negative correlation was found between serum vitamin D levels and major osteoporotic fracture risk ($r = -0.3299$, $p < 0.0064$), but not with hip fracture risk ($r = -0.0683$, $p = 0.309$).

Conclusion: The study indicates a significant negative correlation between serum vitamin D levels and FRAX scores, highlighting that lower vitamin D levels are associated with higher fracture risks in the elderly. This underscores the potential benefit of vitamin D supplementation in reducing fracture risks among older adults. In Romania, the lack of dietary vitamin D supplementation is evident, with one-third of elderly patients showing deficient levels, increasing their fracture risk.

ID896 Escherichia Coli Infections in Pregnancy

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Purpose of this study: The aim of this paper is to investigate the resistance of E. coli to certain types of antibiotics using the antibiogram technique, considering the difficulty of administering these during pregnancy.

Material and method: An observational analytic cross-sectional survey was conducted. The study included 90 pregnant women aged between 18-40 years, who were admitted to the „Dr. Constantin Andreoiu" County Emergency Hospital in Ploiești and diagnosed with E. coli in the bacteriological examination of the cervix. The necessary data for the study were collected from the observation sheets of the hospitalized pregnant women. To determine bacterial resistance, the diffusimetric method, Kirby-Bauer method, was used. The bacterial inoculum used was bacterial culture distributed in a 0.85% saline solution, standard concentration 0.5 McFarland. Two sets of antibiotics were used for the antibiogram. The first set included the antibiotics: amoxicillin/clavulanic acid (AMC), ceftazidime (CAZ), cefixime (CFM), and cefuroxime (CXM). The second set included the following antibiotics: chloramphenicol (C), gentamicin (CN), levofloxacin (LEV), netilmicin (NET), nitrofurantoin (F), and bacitracin (B). The data were analyzed using the Microsoft Office Excel package. For data processing, the COUNTIFS function in Excel was used to filter and sort the initial database.

Results: Of the 90 pregnant women diagnosed with E. coli, 52 presented with ESBL-producing E. coli. Escherichia coli showed the highest resistance to Cefuroxime, with 46 isolates each out of the 90 isolates found resistant. The most sensitive antibiotic from the study was Ceftazidime. There were 80 isolates of E. coli sensitive out of in 38 out of the 90 tested. ESBL-producing E. coli isolates were found even in the oral cavity of newborns, in 45 cases.

Conclusions: Effective multidisciplinary communication can determine the success of diagnosing and treating E. coli infection in pregnant women.

ID902 The Impact of New Functional Therapies in the Rehabilitation of Patients with Advanced Parkinson's Disease

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Aims: The study aims to explore the benefits and limits of new functional therapies (NFT) applied to patients in the advanced stages of Parkinson's disease (PD). In this sense, we acknowledge robotic therapy and virtual reality, by providing activities aimed at specific tasks, facilitate motor learning in various neurological pathologies. By applying NFT, we want to analyze the effects on the gait engram, static and dynamic balance, the increase in aerobic exercise capacity in PD patients, including those following drug treatment administered through device-assisted therapies (DAT).

Methods: This paper is based on an ongoing prospective cohort study, including patients diagnosed with idiopathic PD in advanced stages 3&4 Hoehn&Yahr, who receive conventional therapies with/without a rehabilitation program using both robotic therapy and virtual reality (NFT). The therapeutic program is applied for 10 days, each session lasting approximately one hour, being supervised by a physiotherapist. During the study, several tests are applied: the 10-meter test, the Timed-Up-and-Go test, the Five-Times-Sit-to-Stand test, and the stabilometry exam (performed by the Huber 360 board).

Results: An improvement in walking speed was found regarding the whole sample, and to a greater extent in those with drug treatment administered through DAT. An improvement in dynamic balance was found by increasing the surface of orthostatic stability both in the case of patients who receive drug treatment through DAT, and in those who do not. Thus, the transition from walking with small and numerous steps to walking with longer steps and lower cadence was achieved, obtaining a higher walking speed globally.

Conclusions: We noticed an improvement in walking speed, coordination and muscle strength especially in the upper limbs. Due to the small sample of patients, the usefulness of applying an integrative recovery program with state-of-the-art devices in patients with advanced PD with/without DAT is not yet fully substantiated.

ID904 Early Dynamics of Metabolic Profile in Multiple Trauma Patients

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Objectives: This prospective observational randomized study aims to personalize energy and protein intake for severe multiple trauma patients by utilizing continuous monitoring of their metabolic profile.

Methods: This single-center pragmatic study was conducted at the Trauma Center of the Clinical Emergency Hospital of Bucharest. It included all patients with multiple trauma (Injury Severity Score (ISS)>18) who were mechanically ventilated upon admission to the ICU or within the first 24 hours of admission, and remained ventilated for at least 48 hours. Exclusion criteria: patients under 18 years old, not receiving mechanical ventilation, with contraindications to enteral feeding 48 hours after admission, those who had undergone recent gastrointestinal surgical intervention, on chronic corticosteroid therapy and pregnant women. Indirect calorimetry was initiated within the initial 6 hours of ICU admission to continuously evaluate the metabolic profile and energy needs using E-sCOVX® module paired with Carescape Monitor B450®. Nutritional support was started 48 hours after admission or shock control, using a ramped fashioned approach.

Results: Out of 38 patients with multiple traumas admitted to our unit, 29 were included in the final group study after applying the exclusion criteria. The median age in the study group was 43 and 20 patients were male. Mean blood sugar level was 162.33 mg/dL. Trauma severity assessment revealed a median ISS score of 40. Indirect calorimetry measurements after admission revealed a mean VO2(oxygen consumption) of 320.8ml/min and for rest energy expenditure (REE), the mean value was 2094 kcal/day.

Conclusions: This study suggests the importance of real-time monitoring of the metabolic profile in multiple trauma patients to obtain a deeper understanding of the acute injury's impact. The significant variation in REE within our cohort study and the absence of any correlation between traumatic assessment and severity scores, suggests that metabolic status should be assessed individually.

ID905 Improvement in Glucose Control after Switching to Advanced Hybrid Closed- Loop Insulin Pump in Real-World Users

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Objectives: Advanced hybrid closed loop (AHCL) systems allow improving glycemic control by adjusting the basal insulin delivery and giving self-correcting microboluses, as frequently as every 5 minutes. We performed a retrospective, real-world data study, among patients with type 1 diabetes, who switched from one of the 2 available therapeutic strategies (multiple dose injections/ standard insulin pump) to the use of AHCL MiniMed 780G insulin pump. The aim of the study is to highlight the results of using AHCL MiniMed 780G insulin pump on glycemic outcomes.

Methods: 12 patients with type 1 diabetes, using continuous glucose monitoring system > 70% of the time were included over 2 distinct time periods: one month before and one month after SmartGuard function activation. We considered the following parameters: Time in range (TIR: 70-180mg/dL), Time in tight range (TITR=70-140mg/dL), Time above range (TAR> 180mg/dL), Time below range (TBR< 70mg/dl), Coefficient of variation (CV), Glucose management indicator (GMI).

Results: Using the optimal settings of the pump: active insulin time = 2 hours and glucose target = 100mg/dL, the 12 users obtained the following mean values of the studied parameters, compared to the month before SmartGuard activation: Time in range mean change= 10; Time in tight range mean change= 7.8; Time above range mean change= -8.1; Time below range mean change= -2; Coefficient of variation mean change= -2.9; Glucose management indicator mean change= - 0.4.

Conclusions: One month after switching to advanced hybrid closed- loop insulin pump therapy, the glycemic control rapidly and significantly improved, with an increase in Time in range, Time in tight range and a reduction in Time above range, Time below range, Coefficient of variation and Glucose management indicator.

ID906 Romanian Patients' Perception of the Use of Telemedicine

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Objectives: Our study aims to explore the perceptions of patients in Romania regarding the use of telemedicine. The objectives include identifying factors that influence patient acceptance and satisfaction, understanding perceived benefits and challenges, and assessing the overall willingness to continue using telemedicine post-pandemic.

Methods: A cross-sectional study was conducted using a structured questionnaire distributed online to Romanian patients. The questionnaire collected demographic data, information regarding previous telemedicine experiences, perceived advantages and concerns. It also evaluated patient satisfaction with telemedicine services and their willingness to use telemedicine in the future. Study results will be analyzed using appropriate statistical methods.

Results: We questioned 2253 people aged 18 to 73. 56% of them were unfamiliar with the concept of telemedicine and 79% of them did not use telemedicine services. As expected, younger patients who are familiar with technological advancements showed a higher level of acceptance and satisfaction with telemedicine services compared to older patients. Major barriers included data privacy issues, technical difficulties, and a preference for personal interaction. Key advantages noted were easy access to specialists, saving time, and receiving medical care from home. Notably, 86.8% of respondents believed telemedicine would positively impact the quality of medical services.

Conclusions: The insights gained from this study will be crucial for the effective implementation and optimization of telemedicine services in Romania. Understanding patient perceptions will help healthcare providers and policymakers address barriers to telemedicine adoption, enhance patient education, and improve technology infrastructure. Ensuring data privacy and building trust in telemedicine are essential for its continued use and integration into the healthcare system. Future research should focus on continuous evaluation and adaptation of telemedicine services to meet the evolving needs of patients.

ID907 Complex Clinical Cases in Endocrinology – the Role of Molecular Testing Through the NGS Technique

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Introduction: Genetic endocrine diseases are rare, complex, inherited conditions that can cause symptoms to appear at any time during life. With advances in genomics, the role of genetic diagnosis in endocrinology has become very important. To increase the diagnostic yield of genetic tests for monogenic diseases in endocrinology, the TrueSighOne gene panel was chosen.

Methods / Methodology: We report the results of 30 selected from the National Institute of Endocrinology "C.I.Parhon" sent for genetic evaluation with suspicion of monogenic pathology. We present the genotype-phenotype link in several complex molecularly diagnosed cases. Endocrinology and genetics clinical evaluation, paraclinical testing, next-generation sequencing was performed using the TruSight One gene panel (targeting 4813 genes).

Results: 13 cases with pathogenic mutations were detected in the selected group. We report rare cases: 2 cases in which 2 genetic changes were detected (chromosomal and monogenic change) and 2 demonstrated family cases of monogenic disease (diabetes insipidus neurohypophyseal and NF1). Attention was focused on the multidisciplinary approach to the disease and the clinical implications of genetic testing with the genotype-phenotype relationship and personalized genetic care/counselling.

Discussions / Conclusions: The frequency of positive cases is similar to the frequency reported in the specialized literature. Patients suffering from rare and complex endocrine conditions will be able to benefit from the best treatment and recommendations available for their specific condition. The purpose of this presentation is to sensitize doctors from various specialties on the usefulness of genetic testing in endocrine pathology and the need for a multidisciplinary approach to complex cases.

ID909 Prevention of Associated Mental Health Disorders in Young People with Autistic Spectre Disorder

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Mental Health Disorders (MHD) are one of the 5 main categories of non-communicable diseases (NCD) producing 77% of the disease burden in WHO Europe region. MHD are the highest NCD in world's adolescent population, 14% of adolescents experimenting a MHD. Young people with autistic spectre disorder (ASD) experience MHD 3-6 times more than neurotypical young people, showing anxiety, depression, attention deficit hyperactivity disorder or obsessive-compulsive disorder.

Objective: To identify the main modifiable risk factors contributing to the appearance of a mental health disorder (MHD) in adolescents with autistic spectre disorders (ASD).

Method: Bibliographic research and expert panel discussion.

Results: The changes in physical, emotional and social factors during puberty and adolescence increase the risk of MHD in the general population. Behaviour signs of MHD can be consistently present or fluctuating during puberty and can be overseen. Modifiable risk factors of MHD in children and adolescents with ASD include personal factors: cognitive factors: metacognition, perceptual processing skills, alexithymia, verbal and non-verbal communication capabilities, the ability of the child to develop and manage strategies to adapt to change and to interact with social environment, and socio-environmental factors: parental psychological distress, parenting style, family life issues, the size of peer networks, experiences of bullying, and exposure to adverse life events. The presence of a sibling able to help in communication and in developing social skills is beneficial, as well as an informed and prepared school social environment and teachers.

Conclusion: Personalisation is the key to help children and adolescents with ASD, already vulnerable to the identified risk factors, to maintain their mental condition to ensure their activity and participation capacity and performance in their way to adulthood.

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ID910 Reducing Digital Divide in Ageing People Using ICT-Based Solutions – Results of a Usability Study

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Digital dividing between generations is hard to miss. People being in working age before computers and SmartPhones became routine are skeptical in adopting the new technologies, unless forced by specific situations. Behavior-changing interventions are challenging with no regard for age but they are even more difficult for older adults facing frailty and social isolation. Solutions must be developed to empower users to improve their quality of life in terms of a healthier lifestyle and social participation.

Aiming to provide ageing people with an easy-to-use digital platform supporting welfare services, an ICT based solution was designed, including wearables, activity monitoring, personalized teaching, training and coaching older adults to use digital health.

Objective: To present the results of the usability study of a complex ICT-based solution and service.

Method: A one month long home-based usability study was conducted.

Results: The services supported by the innovative solution include monitoring data regarding physical activity and physiological parameters recorded by wearables, a social communication platform and digital literacy coaching. The coach is trained and supported to provide personalized assistance to each user in regards of ICT, digital health, eHealth. The study results indicate a relevant reduction of technostress in all participants and improved perceived social participation.

Conclusion: The combination of lifestyle monitoring and timely corrective interventions with educational and personalized practical training activities requires the implementation of specific algorithms, apps and training procedures. Managed with care, the process of appropriating new technologies through practical engagement and meaningful feedback improves users' attitude towards technologies and trust in self-efficacy and in the benefits of using novelty in health and lifestyle self-management.

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ID911 The Role of Technology in Subacute Stroke Rehabilitation

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Stroke survivors' numbers increased lately, and the age of stroke onset decreases, generating important social and economic consequences. Post-stroke subacute phase is a sensitive period. Neuroplasticity can be enhanced, and relevant functional gains can be achieved in this rehabilitation window if appropriate management of the cases is applied. Technological means abound now and can support subacute stroke rehabilitation and improve the cost-efficiency of the rehabilitation process.

Objective: To identify the benefits and drawbacks of using advanced rehabilitation technologies in reaching the objectives of rehabilitation intervention programs in personalised subacute stroke rehabilitation.

Method: Bibliographic research and expert panel conclusions.

Results: To optimise rehabilitation outcomes, personalisation as well as quantified intense interventions can make a difference, and technology can support the Physical and Rehabilitation Medicine multiprofessional team and empower the patients to actively participate. Technologies support therapist-lead as well as self-conducted training and may assist activities of daily living, increase the time allocated daily for rehabilitation and enable social participation. Sensorised tools enable therapists to conduct in-person or remote communication and training, in safe manner, and provide patients with timely feedback, empowering patients to self-manage interventions. All disability risk factors are tackled and the efficiency of the rehabilitation process outcomes is improved.

Conclusion: As stand-alone or integrated in complex services, advanced rehabilitation technologies can optimise the post-acute stroke rehabilitation pathways, increasing the time dedicated to active interventions and improving rehabilitation outcomes. Two challenges remain: developing friendliest human-technology interactions to maximise the technologies' adoption and finding the most efficient way to integrate technologies in the continuum of rehabilitation in the right place and moment.

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ID919 The Impact of the Reimbursement Policies on the Uptake of Influenza Vaccination in Romania

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Objective: In Romania, the influenza vaccination uptake has decreased from 16.6% in the overall population and 49.4% among the seniors in 2007-2008 to 8% in the overall population and 23% among the seniors in 2022-2023. An important change of the influenza vaccination strategies occurred during the 2023-2024 season with the introduction of the reimbursement policies. Influenza vaccines are now totally reimbursed for children and adolescents, seniors, pregnant women, people with chronic diseases, healthcare workers (HCWs), and 50% reimbursed for people aged 45-65 years old without a chronic disease. We aim to assess the impact of the reimbursement policies on the influenza vaccination uptake.

Methods: We performed a descriptive and comparative analysis of the data recorded in the National Electronic Registry of Vaccinations regarding the influenza vaccinations carried out during the last two influenza seasons.

Results: In the 2023-2024 season, 1,078,591 influenza vaccinations were recorded, 98% with reimbursed vaccines; 7% to children and adolescents, 21% to people 45-65 years old, 68% to people≥65 years old; 26% to people with chronic diseases, 0.1% to pregnant women, 2% to HCWs. The influenza vaccination uptake was 6% in the overall population, 20% among the seniors and 5% among HCWs.

In the 2022-2023 season, 1,492,946 influenza vaccinations were recorded, 99% with the standard-dose inactivated influenza vaccine centrally purchased within the National Vaccination Program; 3% to children and adolescents, 26% to people 45-65 years old, 63% to people≥65 years old; 16% to people with chronic diseases, 0.04% to pregnant women and 2% to HCWs. The influenza vaccination uptake among HCWs was 8%.

Conclusions: Despite the extended access to the influenza vaccines in the 2023-2024 season, the uptake was suboptimal. Raising awareness regarding the benefits of influenza vaccination, as well as recommending and carrying out influenza vaccinations during regular medical visits could improve the influenza vaccination uptake in Romania.

ID924 Giant Diaphragmatic Hernias

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Giant diaphragmatic hernias (GDH) are critical conditions where abdominal organs migrate into the thoracic cavity through a diaphragmatic defect. These hernias, particularly Bochdalek's hernias, are usually congenital but rarely remain asymptomatic until adulthood.. Surgical repair, often involving the use of synthetic mesh, is the primary treatment. However, with increasing age, potential respiratory complications and abdominal compartment syndrome can complicate postoperative care.

We present the case of a 35-year-old patient with a giant left diaphragmatic hernia, which was previously asymptomatic and was accidentally discovered following a thoracic X-. Given that the transverse and ascending colon, stomach, spleen and pancreas had herniated into the thorax, the patient required a complex surgical procedure. This involved diaphragmatic hernia repair with mesh placement, umbilical hernia correction, and omphalectomy. Preoperative diagnostics, including bronchoscopy and CT, identified a bronchial diverticulum and Bochdalek herniation with secondary left lung hypoplasia.

Postoperatively, the patient remained mechanically ventilated. However, abdominal compartment syndrome soon developed, with intra-abdominal pressure exceeding 22 mmHg, necessitating emergency decompression surgery.

The patient remained in the ICU for further monitoring until respiratory mechanics improved and the collapsed lung was readapted. To achieve this, different levels of PEEP were administered, along with intermittent continuous positive airway pressure and alternating high-flow nasal oxygen to keep the lung open. After a 12-day ICU stay, he was safely transferred to the ward, where his recovery progressed positively.

Continuous monitoring and tailored interventions were crucial in managing this complex case.

This case highlights the rarity and complexity of giant congenital asymptomatic diaphragmatic hernias in adults, which are often discovered incidentally and involve multiple organs. It also underscores the severity of postoperative complications like abdominal compartment syndrome. A comparison with the scientific literature emphasizes its uniqueness and the need for a highly individualized management approach.

ID929 Cardiac Biomarkers in Patients with Systemic Lupus Erythematosus: Association with Valvular Heart Disease and Utility for Routine Screening

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Background: Valvular heart disease (VHD) is more prevalent in patients with systemic lupus erythematosus (SLE) compared to the general population, determined by direct autoimmune involvement as well as early valvular degeneration, and is associated with higher morbidity and mortality.

Purpose: We aimed to assess the utility of cardiac biomarkers in screening SLE patients for the early detection of VHD.

Methods: This observational prospective cohort study included consecutive adult SLE patients evaluated in our Cardiology Department between August 2021 and May 2024. Clinical data, echocardiography and laboratory parameters including NT-proBNP and high-sensitivity cardiac troponin T (hsTnT) were obtained. Patients with left ventricular ejection fraction ≤50% were excluded. Echocardiographic diastolic dysfunction (DD) was defined according to the 2016 ASE/EACVI guidelines.

Results: Our cohort included 86 SLE patients (mean age 53±12 years, 96% female, 30% with moderate VHD, 41% DD). Median disease duration was 13[IQR 4-21] years.

NTproBNP was associated with DD, mitral regurgitation (MR), aortic regurgitation (AR), and mitral stenosis (MS), but not with ischemic heart disease (IHD) (AUC 0.560, p=0.61), arterial hypertension (HTN) (AUC 0.553, p=0.43), or diabetes mellitus (DM) (AUC 0.637, p=0.29).

hsTnT was associated with DD, MR, AR, MS, IHD (AUC 0.749, p=0.004) and pericardial disease (PD) (AUC 0.736, p=0.002), but not with HTN (AUC 0.612, p=0.12) or DM (AUC 0.524, p=0.86).

Association of NTproBNP and hsTnT and VHD was documented for patients with and without DD.

In multiple linear regression models adjusted for age and DD, MR (p=0.038), MS (p<0.001), AR (p=0.017) were independent predictors of NTproBNP levels.

In multiple linear regression models adjusted for age, DD, PD, and IHD, MS (p<0.001) and AR (p=0.032) were independent predictors of hsTnT levels.

Conclusions: Increased levels of NTproBNP and hsTnT in SLE patients should prompt echocardiographic evaluation and screening for VHD and DD.

ID934 The Multiple Facets of Hereditary Haemorrhagic Telangiectasia – a Case Series Experience from a Liver Transplant Center in Romania

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Introduction: Hereditary hemorrhagic telangiectasia (HHT), also known as Rendu-Osler-Weber syndrome, is a rare autosomal dominant disorder characterized by mucocutaneous telangiectasia and systemic vascular malformations. HHT can be diagnosed using the Curaçao criteria. If at least three criteria are met, the diagnosis of HHT is considered definite.

Objectives: The objective of this study was to describe the clinical characteristics, management and recurrent complications of patients diagnosed with HHT in the Internal Medicine and Hematology Departments of the Fundeni Clinical Institute

Method: A descriptive and retrospective study consisting of 24 patients over ten years (2014-2024)

Results: Out of 24 patients, 20 patients were women with a median age at the onset of symptoms of 28.3 years and at first admission of 45.5 years. In 17 patients (70.8%), the HHT diagnosis was confirmed by using the Curaçao Criteria. In 7 patients (29.1%), genetic testing revealed mutations in the ACVRL1 and ENG genes. The most common reason for admission was epistaxis (83.3%). The vascular malformations involved multiple visceral organs with the most common sites being the liver (37.5%), lung (12.5%), pancreas (8.3%) and kidney (4.1%). The management of the patients included blood transfusions, ferrotherapy, argon plasma coagulation, radiological embolization and liver transplantation. The main complications were due to cardiac heart failure (25%), infections (16.6%), thrombosis (12.5%), ineffective erythropoiesis (2.5%)

Conclusions: Vascular dysplasia in HHT is heterogenous, individuals from the same family often present with different sites of arteriovenous malformations. Now, only symptomatic treatment options are available in referral centres in our country, with angiogenesis targeting agents such as Bevacizumab being a prospective option that has shown promising results in studies. Early identification and treatment of symptoms and complications are crucial for enhancing the quality of life for individuals with HHT.

ID938 Non-Invasive Colorectal Cancer Screening with ONCO-VOC

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Objectives: The ONCO-VOC tool aims to enhance early detection and screening for colorectal cancer (CRC) through non-invasive methods using breath, blood, urine, and stool samples. It focuses on identifying volatile organic compounds (VOCs) in exhaled breath as biomarkers for CRC, aiming to surpass existing breath analyzers in biomarker identification, cost-effectiveness, portability, sensitivity, and specificity.

Methods: The ONCO-VOC technology utilizes Volatolomics to identify Volatile Organic Compounds (VOCs) present in biological samples. The Gas Chromatography-Mass Spectrometry (GC-MS) apparatus is employed to gather volatile organic compound (VOC) patterns from both healthy individuals and patients with colorectal cancer (CRC), resulting in the creation of a database of VOC signals. The breath analyzer consists of 8 nano-sensors that alter their electrical characteristics when volatile organic compounds (VOCs) are absorbed. The resulting electro-chemical signals are processed using pattern recognition to distinguish between samples from individuals with colorectal cancer (CRC) and those who are healthy.

Results: In 160 colorectal cancer samples, the ONCO-VOC method identified 85% of positive cases and 94% of negative cases. With AI algorithms that recognize volatile organic compounds (VOCs), the breath analyzer analyzes small samples of exhaled air in 2-3 seconds and delivers results in under 2 minutes. Connecting the mobile app to capture and visualize data helps stratify risk individually.

Conclusions: The ONCO-VOC tool advances non-invasive CRC screening technology, extending a mature prototype tested in hospitals with over 16,000 subjects for various cancers, including CRC. Its ability to offer early CRC detection through breath analysis can be integrated into widespread screening programs, reducing costs and improving early detection rates.

ID821 Cervical Ectopic Pregnancy – a Case Report

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With an occurrence rate of less than 0.1% of all ectopic pregnancies, cervical pregnancy is a rare kind of ectopic pregnancy that results from the blastocyst implanting in the cervical canal. Reducing potential morbidity and mortality requires prompt diagnosis and treatment. Given the rarity of this condition, the most effective method of treatment is yet to be found.

Objective: We discuss the case of a 22-year-old woman who had a c-section delivery in 2021 and who was experiencing amenorrhea for seven weeks. A gestational sac implanted in the cervical canal was discovered via transvaginal ultrasonography, displaying a 7-week-old embryo with a constant heart rate of 165 bpm.

Material and methods: Based on the patient's desire to preserve fertility and hemodynamic state, 200 mg oral mifepristone followed by 800 mcg vaginal misoprostol 36 hours later were administered, after informed consent. Three weeks later, the patient came for follow-up and reported mild vaginal bleeding during that time. A gestational sac with an embryo measuring CRL 3.11 cm (10 weeks) and with a current heart rate of 158 bpm was discovered using transvaginal ultrasound. The fertility-sparing treatment chosen was embolization of the uterine artery and cervical aspiration and curettage, performed under general anesthesia. Results: No incidents were reported either during or following the intervention. A subsequent ultrasound showed that the cervical canal was empty.

Conclusion: In the case that was presented, oral mifepristone and vaginal misoprostol had no effect since the pregnancy was not successfully terminated. Uterine artery embolization was the key to minimizing bleeding, decreasing morbidity and the need for an emergent hysterectomy during an invasive procedure in patients with high risk of bleeding, which ultimately preserved fertility.

ID822 Validation of Prediction Scores for Graft Survival Post-Liver Transplantation in Romania: a Retrospective Cohort Analysis

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A growing number of clinical risk scores have been recently developed for predicting allograft failure after liver transplantation. Given most of them have been developed from single-center cohorts, there is need for external validation. Our aim was to analyze the scores that better predict 6 month graft survival on a retrospective cohort of patients that underwent liver transplantation at the Fundeni Clinical Institute in Bucharest between January 2019 to May 2024.

We analyzed 5 previously published scores in 323 liver transplantations [Eurotransplant donor risk index (ET-DRI/DRI), donor age and model for end-stage liver disease (D-MELD), early allograft dysfunction (EAD), model for early allograft dysfunction (MEAF), liver graft assesment following transplantation (L-GrAFT7/L-GrAFT10), early allograft failure simplified estimation (EASE)].

Our results showed that scores that include preoperative and postoperative data are better predictors for graft survival than scores based on pretransplant data. Despite the relatively complex calculation, the EASE score demonstrated a significant prognostic value and was best for predicting 6-month graft survival.

ID842 Digestive Surgical Interventions in Retroperitoneal Tumor Surgery

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Retroperitoneal tumors are a group of rare heterogeneous tumors that are usually associated with poor prognostic. They display an insidious progressive development until reaching very important dimensions, with frequent compression or even invasion into various organs and tissues. Radical surgery, which is the mainstay of the treatment, is characterized by a high degree of complexity and risk of significant operative and postoperative complications.

The aim of the current study was to evaluate the impact of digestive organs tumor involvement on the operatory outcome and patient prognostic.

Patients and methods: The retrospective study was conducted on a group of 65 patients with primary retroperitoneal tumors operated on over a period of 16 years. Patient data from the medical charts, preoperative imagining results, operative, histopathologic and follow-up records were subjected to an extensive statistical analysis to determine the significance of digestive organ tumor involvement for the patient.

Results: 60.7% of the patients had digestive organ tumor involvement. However, digestive surgery was achieved in only 7.1% of the patients, as the tumor frequently only compressed/displaced and did not directly invade digestive organs or because of the too advanced stage of the neoplasia. There was a significant association between the need of digestive interventions and non-radical surgery, as well as with the occurrence of postoperative complications. As non-radical surgery and perioperative complications were both associated to poor survival, retroperitoneal tumor digestive organ involvement indirectly determined a lower patient survival rate.

Conclusions: Retroperitoneal tumor surgery is very complex, because such neoplasias frequently directly or indirectly involves important structures, including digestive organs. Digestive surgery during retroperitoneal tumor operations increases the degree of operative complexity and associates significant complications, driving to lower patient survival rates. Early knowledge of digestive organ tumor involvement is essential for an adequate and improved surgical approach and postoperative management of such cases.

ID843 The Prognostic of the Benign Retroperitoneal Tumors

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Retroperitoneal tumors are rare neoplasias, usually malignant, that are frequently characterized by an insidious growth until reaching very significant dimensions, when they arrive to be diagnosed. They usually associate low survival rates even after radical surgery and a high tendency to aggressive local and regional recurrences. Only 20% of the retroperitoneal tumors appear to be benign, often displaying similar features to the malignant types. The aim of the study was to identify putative prognostic factors for patients with benign retroperitoneal tumors.

Patients and methods: We conducted a retrospective study on 136 patients with primary and secondary retroperitoneal tumors operated-on in our Clinic. Patient-, tumor-, therapeutic- and follow-up-related data were statistically analyzed to identify predictors for the patients confirmed with benign retroperitoneal tumors.

Results: 23.2% of the patients had benign retroperitoneal tumors. Although it appeared that radical resection was more frequently performed for benign neoplasias, there was no significant association between the benignity of the tumor and the survival of the operated-on patients. Radical surgery was the only significant prognostic factor for benign tumors, like the malignant histopathologic types. Benign retroperitoneal neoplasias had similar rates of vascular and visceral involvement, recurrence and perioperative complications to the malignant tumors.

Conclusions: As benign retroperitoneal tumors appear to behave similarly to the malignant types in terms of aggressiveness and prognostic, all efforts to achieve radical surgery in such cases should be taken. Benignity in the retroperitoneal space should be considered carefully and should not represent a source of comfort, as the same active and prompt therapeutic approach and careful follow-up should be sought as for the malignant types, to increase the survival rates of the operated-on patients.

ID848 Challenges and Innovations in Treating Distal Tibial Joint Fractures: a Case-Based Analysis

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Tibial pilon fractures, also known as distal tibial joint fractures, are a challenging aspect of traumatology, accounting for 3-10% of tibial fractures and less than 1% of fractures in the lower extremities. The objective of this study is to provide a comprehensive understanding of the complex issues involved in treating these fractures, with a specific focus on surgical procedures, patient outcomes, and the management of complications.

We conducted a thorough examination of seven intricate instances of tibial pilon fractures that were managed at the Bucharest University Emergency Hospital. The surgical procedures performed were Open Reduction and Internal Fixation (ORIF), external fixation, and minimally invasive methods. The patients were categorized using the Rüedi/Allgöwer and Gustilo-Anderson classification systems, and their progress was assessed using radiographic imaging and clinical examinations.

The study showed that single-stage ORIF was successful in treating closed fractures with healthy soft tissues, offering timely treatment and favorable results. A two-stage technique, consisting of initial external fixation followed by ORIF, has been found to be advantageous in the management of open fractures. This strategy effectively reduces the occurrence of problems such as infections and ensures appropriate alignment of the fractured bone. Stringent treatment is necessary for cases involving extensive soft tissue damage in order to prevent problems after surgery.

Tibial pilon fractures necessitate an individualized strategy that takes into account the specific type of fracture, the state of the surrounding soft tissues, and the patient's willingness to follow medical recommendations. The study emphasizes the significance of individualized treatment strategies and following medical advice to maximize results and reduce problems in the management of tibial pilon fractures. Ongoing advancements in surgical procedures and patient management are crucial for improving the effectiveness of treatment in this complex field.

ID867 Severe Gastric Dilatation in a Hypertrophic Pyloric Stenosis of an Adult Male: a Case Report

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Background: Hypertrophic pyloric stenosis (HPS) is a rare finding in adults. The etiology is obscure and therea is a myriad of nonspecific symptoms that can be found. Radiology, CT scan and endoscopy aids in diagnosis, but the definitive diagnosis is made on pathology.

Case presentation: We present the case of a 53-year-old-male, heavy smoker, with no significant medical history. He had multiple presentations for acute gastric dilatation due to pyloric stenosis, that had multiple endoscopic dilatations associated with antisecretory drugs, but the symptoms recurred. He then was admitted to our surgical department, with intense abdominal pain and vomiting. Physical examination revealed abdominal distension and mild peritonism. Lab found elevated c-reactive protein and abdominal X-ray showed severe gastric dilatation. Subsequently, the CT scan revealed complete severe gastric dilatation with food and air, with no passage to the duodenum. There was no pneumoperitoneum or free fluid observed. Upper endoscopy revealed significant gastric dilatation, the reach to intubation of the duodenum was not feasible. It was addressed to surgery and intraoperatively we found a dilated stomach measuring 38 cm at the longest axis. We opted for a distal gastrectomy with Billroth I anastomosis. The postoperative course was uneventful but marked by a few days of delayed gastric emptying syndrome, managed conservatively. Pathology shows thickened pylorus and marked hypertrophy and hyperplasia of gastric muscularis propria. No malignancy was found.

Conclusion: HPS is common in infants, but rare in adults. Endoscopic dilatations is the first option of treatment, but when it fails, surgical treatment is mandatory. Multiple approaches were described, but there is no standard of care.

ID872 Primary Torsion of the Greater Omentum – a Diagnostic Challenge

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Introduction: The intraabdominal viscera are fixed by various ligaments. Their laxity or incomplete development can predispose to hypermobility of the viscera and implicitly to organ torsions and their ischemic complications. Abnormal visceral mobility can be attributed to primary or secondary peritoneal suspensory ligaments abnormalities.
Material and method: We present the case of a 33-year-old male patient, with no significant medical history, treated in March 2022. The patient was hospitalized for pain in the right iliac fossa and abdominal flank, flatulence and alteration of the general condition, symptomatology that occured 48 hours before presentation to the hospital, progressively increasing until the admission. Clinical examination revealed intense abdominal pain in the right iliac fossa, with signs of peritoneal irritation at this level. On admission, laboratory tests showed marked leukocytosis, hyperglycemia, increased cytolysis enzymes and inflammatory syndrome. Abdominal ultrasound revealed agglutinated intestinal loops and a small amount of interileal fluid in the right iliac fossa, as well as abdominal flatulence. Emergency surgery was performed for suspected acute appendicitis and 720-degree torsion of the greater omentum with ischemic necrosis, Toldt I fascial coalescence defect and secondary catarrhal acute appendicitis were found, for which omentectomy and appendectomy were performed. The postoperative evolution was uneventful.
Results: The pathological examination showed greater omentum with extensive blood infiltrate, with fibrinoid exudates and reactive mesothelial hyperplasia, numerous epiploic congested capillaries and non-specific acute catarrhal appendicitis with acute sero-fibrinous periappendicitis.
Conclusions: Torsion of the greater omentum is one of the rare causes of acute abdomen, difficult to diagnose clinically preoperatively, which usually mimics acute appendicitis. Primary torsion of the omentum occurs in the absence of an associated or secondary intraabdominal pathology. Prompt diagnosis and appropriate treatment lead to the avoidance of serious life-threatening consequences of visceral ischemia.

ID875 Management of Extensive Skin and Soft Tissue Necrosis Due to Acute Meningoencephalitis of Unidentified Etiology

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Introduction: Meningitis is a common diagnosis in children, and some cases may develop life-threatening complications. Purpura fulminans following acute meningoencephalitis remains a rare and debilitating condition and its management raises the same challenges as severe burn injuries. This skin and soft tissue necrosis can be caused by multiple infectious agents, although in many cases no etiology could be identified. Surgical treatment depends on the extent of the areas involved and consists of debridement, skin grafting, dressings, local flaps or amputations.
Material and methods: We present the case of a 4-year-old girl patient who was transferred to our clinic for surgical treatment of 18% TBSA necrosis due to acute meningoencephalitis for which no infectious causing agent could be identified.
Results: The patient was initially treated in another hospital, where she went for pain of the right hip with no abnormal radiological findings. She initially received oral NSAID as outpatient treatment. After less than 24 hours she returned to the hospital with fever and purpura fulminans on calves, thighs, anterior and posterior thorax and both arms. Lumbar puncture with examination of cerebrospinal fluid has been performed and showed a turbid CSF and rare positive cocci on culture. The surgical management consisted of excisional debridement followed by intermittent-pressure NPWT dressings for 10 days, to ensure tissue viability and obtain a healthy granulation tissue. Finally, we performed delayed coverage using autologous split thickness skin grafts with excellent take and definitive closure.
Conclusions: Purpura fulminans is a complication of meningoencephalitis with devastating consequences. For a successful clinical approach in the acute phase, it is mandatory to make an early correct diagnosis, provide life function support through intensive care and administer specific antibiotic therapy. The soft tissue necrotic areas should be excised only after the lesion progression stopped. Postponing the final coverage and using NPWT to ensure a viable grafting bed proved to be an effective method that resulted in optimal graft take and healing.

ID879 Complementary Medicine in Obstetrics: Benefits, Limits and Dangers

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Introduction: Wide access to varied, attractive and aggressively promoted information can induce pregnant patients to believe that during pregnancy any form of alternative/complementary therapy can be the saving solution for a medical problem, because these types of therapies are natural, therefore harmless. On the other hand, doctors end up having a reaction located at the opposite pole, frequently rejecting brutally, with superiority any other option outside of allopathic treatment.
Material and method: Synthetic information from specialized literature and from personal experience regarding the indications, benefits, limits and risks of some of the branches of complementary medicine are presented.
Results: From all the forms of complementary therapies we present: phytotherapy, aromatherapy and apitherapy. Non -specialists must find out that modern phytotherapy is based on the scientific data of phytochemistry, pharmacognosy and toxicology and is in no way empirical.
Valuable therapeutic resources with proven effectiveness are presented for each trimester of pregnancy, during labor, postpartum and breastfeeding. Possible therapeutic errors, which must be avoided during pregnancy, are also detailed. Contraindications are also highlighted.
Conclusions: The positive results of many of the complementary therapies deserve to be known and accepted by the obstetric practitioner for the definite benefit of the expectant mother, provided that these treatments are either indicated by a specialist in these therapies, or that the obstetrician himself acquires complementary knowledge. The source of the preparations should be known, and their composition should benefit from rigorous purity control.

ID901 Intrahepatic Cholestasis of Pregnancy

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Objectives: Intrahepatic cholestasis of pregnancy represents a hepatic disorder characterized by pruritus and elevated bile acids. The incidence rises to 2-5% of pregnancies. The etiology remains complex and poorly understood. The maternal prognosis is generally favorable if the overall management starts early and efficiently. However, the fetal morbi-mortality augments with the degree of the cholestasis. Considering the associated materno-fetal risks and the lack of an integrative protocol, the scope of this article is to present a clinical case, illustrating the difficulties is diagnosis, treatment, surveillance and further perinatal complications associated with the cholestasis of pregnancy.
Methods: We present the case of a 32 years-old primipara who indicates at the 28 weeks regular check-up the presence of palmoplantar pruritus and gingival bleeding. The follow-up blood test determines a haemoglobin 9,8g/dl, ALT 450 U/l, AST 390 U/l, Quick time 14 seconds, bile acids 68 micromol/l, concurring with the diagnosis of cholestasis of pregnancy. The decision is to introduce medical treatment with ursodeoxycholic acid 250mg x3 per day, with weekly bile acid control, prenatal ultrasound and non-stress test. There is a noticeable clinical and biological improvement, with further fetal monitoring in physiological norms. The delivery occurs at 35 weeks by cesarean section after spontaneous labor and breech presentation, with favorable clinical and biochemical outcome both of mother and newborn.
Results: In the international literature, there is scarce and inconsistent evidence for a proper strategy both is diagnosing and in monitoring a pregnancy with cholestasis. In the context of uncertainty, the scope of any such case is to determine an approach to improve the maternal symptoms and establish a fetal management to minimize fetal sufferance.
Conclusion: Pregnant patients with pruritus without rash at the end of second trimester have the recommendation to check the bile acid and transaminases seric levels. Thus, the cholestasis diagnosis can be established early, allowing the introduction of a proper medical treatment, meticulous fetal monitoring and establishing the delivery moment to avoid fetal complications.

ID917 Acute Abdomen: a Systematization of the Concept

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Introduction: Acute abdomen is a critical medical emergency characterized by severe, sudden abdominal pain that necessitates immediate evaluation and intervention. Understanding its various etiologies, diagnostic methods, and therapeutic approaches is crucial for effective management.

Materials and methods: This article conducted a comprehensive narrative review, including 15 articles selected from major academic databases such as PubMed and Scopus. Inclusion criteria focused on studies published in the last 20 years that provided data on epidemiology, diagnostic methods, and treatment strategies for acute abdomen. Exclusion criteria included articles that lacked sufficient methodological rigor or relevance. The articles were critically analysed to extract and synthesize key findings.

Results: The review highlighted the significance of detailed anamnesis and imaging techniques like CT and ultrasound in diagnosing acute abdomen. CT imaging is crucial for accurately diagnosing conditions such as acute appendicitis, while ultrasound, particularly when performed by surgeons, reduces the need for additional testing and hospital admissions. Treatment approaches such as laparoscopic appendectomy were found to offer faster recovery times compared to open surgery. The review also identified non-specific abdominal pain as the most common reason for emergency room visits, emphasizing the need for precise diagnostic tools.

Conclusions: The study highlights the importance of a thorough anamnesis and the use of advanced imaging techniques in managing acute abdomen. The findings suggest significant benefits of these approaches, advocating for their inclusion in standardized clinical guidelines. Continuous education and training for healthcare professionals are essential to improve the recognition and treatment of this critical condition.

ID920 Early Outcomes after Distal Pancreatectomy with or Without Splenectomy – a Multicentric Cohort Study

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Background/Aim: Preservation of the spleen during distal pancreatectomies (DP) is increasingly used for specific pathologies. However, the

impact of splenectomy on early outcomes remains controversial. The present study aims to assess the early outcomes of patients who underwent DP with vs. without splenectomy.
Patients and methods: From February 2017 to May 2024, a national retrospective cohort study was undertaken in 12 surgical centers, including patients with DP. The patients were divided into a spleen-preserving DP group (SPDP) and a DP with splenectomy (DPS) group. The patients' data were prospectively collected in an electronic database. The primary outcomes were in-hospital complication rates, while the secondary outcomes included operative time and blood loss.
Results: Overall, 314 patients with DP were included: 42 underwent SPDP (13.4%) and 272 DPS (86.6%). There were no statistically significant differences between the groups of patients with DP with or without splenectomy in overall (58.8% vs. 69%, p = 0.232) and severe morbidity (13.6% vs. 4.8%, p = 0.133), mortality (4.4% vs. 0%, p = 0.379), clinically relevant pancreatic fistula (26.1% vs. 31%, p = 0.574), delayed gastric emptying (12.1% vs. 2.4%, p = 0.062), and postoperative bleeding (8.5% vs. 0%, p = 0.054). However, SPDP was associated with statistically significantly less operative time (163 vs. 240 min, p < 0.001) and blood loss than DPS (200 vs. 400 ml, p < 0.001).
Conclusion: Preserving the spleen during DP is associated with reduced operative time and blood loss without increasing the in-hospital complication rates.

ID923 Optimal Surgical Intervention for Colorectal Cancer in Lynch Syndrome

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Objectives: Lynch syndrome is an autosomal dominant disease that increases the risk of developing multiple cancers such as the colorectal one, requiring effective surgical interventions. This review assesses the comparative efficacy of segmental versus total colectomy in managing this high-risk population.
Methods: We analyzed data from fifteen studies published from 2013 to 2023, which were indexed in PubMed using keywords related to Lynch syndrome and colorectal cancer treatment. These studies focused on comparing the outcomes of different surgical approaches without assessing the risk of bias. The method of abstraction was employed to synthesize data.
Results: The collective findings suggest that total colectomy significantly reduces the incidence of cancer recurrence and the development of metachronous tumors compared to segmental colectomy. Total colectomy, however, is linked to diminished bowel function, perianal discomfort, and fecal incontinence. Additionally, the total intervention is associated with a higher incidence of rectal incontinence, whereas the segmental one has higher rates of anastomotic leaks and the need for further surgeries. There is no significant difference between the survival rates of the two procedures. Analyses using Incremental Cost-Effectiveness Ratio (ICER) indicate that total colectomy is both cost-effective and life-saving. Furthermore, mortality is another important factor included in this review, having a higher value after the total procedure comparing to the segmental one.
Conclusions: Although both surgical strategies offer distinct benefits, total colectomy is generally the optimal choice for patients with Lynch syndrome facing colorectal cancer. The decision-making process remains complex, emphasizing the necessity for personalized treatment plans tailored to individual patient profiles.

ID926 Acute Kidney Injury Caused by the Administration of Iodinated Contrast Agents in Traumatized Patients – Is There Evidence Behind the Myths?

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Objective: Acute kidney injury induced by the administration of contrast agents (CA-AKI) is a debated topic in the medical world. Various myths have led to interventions that can sometimes be detrimental to the traumatized patient if they delay the diagnostic process. The aim of this study is to identify the evidence supporting or refuting the most common information related to CA-AKI in trauma.
Materials and methods: We conducted a narrative review of the literature, including both primary and secondary research articles, related to the occurrence of acute kidney injury in patients who were administered iodinated contrast agents for imaging or interventional procedures.
Results: Our analysis showed that much of the knowledge about CA-AKI is supported only by low-quality evidence, and the prevalence of CA-AKI has been significantly exaggerated in numerous studies. Early research often used outdated contrast agents with higher nephrotoxic potential, leading to higher reported rates of AKI. However, with the development of modern, low-osmolar, and iso-osmolar contrast agents, the actual risk of AKI has decreased substantially.
Conclusions: Not all traumatized patients are at risk for developing CA-AKI. Therefore, intravenous contrast investigations should not be delayed based on serum creatinine values. This literature review challenges the main preconceptions related to CA-AKI in trauma, highlighting the importance of evidence in clinical decision-making. The existence of a protocol related to imaging for the traumatized patient can lead to improved quality of medical care for these patients.

ID928 The Hidden Culprit: Diagnosing a Perforated Duodenal Ulcer Without Free Air on Imaging

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Introduction: Acute abdominal pain in women of reproductive age can present a diagnostic challenge due to the wide range of potential etiologies. Imaging and laboratory tests play a critical role in narrowing down the differential diagnosis, but sometimes definitive diagnosis requires surgical exploration.
Materials and methods: We present the case of a 35-year-old female presented to the emergency department with acute abdominal pain
Results: A 35-year-old woman presented to the emergency department with acute abdominal pain. Initial physical examination revealed diffuse abdominal tenderness. An abdominal ultrasound was performed, revealing the presence of free fluid in the peritoneal cavity. A subsequent computed tomography (CT) scan confirmed the presence of free fluid but did not show any free air, which is commonly associated with gastrointestinal perforations. Blood tests indicated an inflammatory response, with elevated white blood cell count and C-reactive protein levels.
Despite the absence of free air on imaging, the clinical picture and persistent symptoms warranted further investigation. A diagnostic laparoscopy was performed, which revealed a perforated anterior duodenal ulcer. The perforation was managed surgically, and the patient was started on appropriate antibiotic therapy and proton pump inhibitors.
Conclusions: This case underscores the importance of considering a perforated duodenal ulcer in the differential diagnosis of acute abdominal pain, even in the absence of free air on imaging. Laparoscopy proved essential for definitive diagnosis and treatment in this patient, highlighting its role in cases where non-invasive diagnostic methods are inconclusive. Early surgical intervention was crucial in preventing further complications and facilitating recovery.

ID942 Unusual Cause of Ascites and Hydrothorax – Uterine Fibromatosis

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Introduction: The main causes of ascites are cirrhosis, heart or kidney failure, pancreatitis or neoplasms, and for pleurisy the most common causes are infections, heart failure, pulmonary embolism or neoplasm. Pseudo-Meigs syndrome is a rare condition defined by the association of a benign pelvic tumor without ovarian origin and the presence of ascites and hydrothorax. This syndrome can be a rare complication of uterine fibromatosis.

Methods: We present the diagnostic steps (clinical examination and paraclinical investigations) and the management in the case of a 41-year-old woman with uterine fibromatosis who was diagnosed with Pseudo-Meigs Syndrome.

Results: A 41-year-old woman admitted to another hospital for intense abdominal pain, lipothymia and recent weight loss. Blood tests revealed severe anemia (Hb 6.3 g/dl), associated with leukocytosis and neutrophilia. The patient required the transfusion of one unit of blood. CT scan showed ascites, pleural effusion and a large fibromatous uterus (13/11/10 cm) with a central necrosis area. No adenopathy or liver, kidney and pancreatic lesions were described. The patient was referred to our clinic for a second opinion. The presence of viral hepatitis was not confirmed, and the tumor markers CA 19.9, CA 15.3 and CEA were within normal limits. The CA 125 value was 295 mUI/ml. The investigations were completed with MRI abdomen and pelvis, gastroenterology consultation, endoscopy and colonoscopy which did not indicate the presence of suspicious lesions. Exploratory laparotomy was decided and total hysterectomy with bilateral adnexectomy was performed. The pathology report indicated the presence of uterine fibroids with areas of necrosis and hyalinization, without malignant lesions. The evolution of the patient was favorable postoperatively. The CA 125 value decreased, and ascites and hydrothorax did not reappear. We established the diagnosis of Pseudo-Meigs Syndrome.

Conclusions: The presence of uterine fibroids, especially if they have areas of necrosis, can cause ascites and hydrothorax. In such cases, an extensive evaluation of the patient and elimination of the frequent causes of ascites and hydrothorax is necessary.

THE WINNERS OF THE YOUNG INVESTIGATORS' AWARD COMPETITION

YOUNG INVESTIGATORS' AWARD – MEDICAL SPECIALITIES

ID873 Incidence of anemia and association with perioperative blood products requirements and ICU length of stay in liver transplant patients- a retrospective observational study
Iulia-Alexandra Constantin

YOUNG INVESTIGATORS' AWARD – SURGICAL SPECIALITIES

ID941 Assessment of Medical Students' Knowledge for Polytrauma Cases in Romania: A Cross-sectional Study
Vlad Buică, Dan Nicolae Păduraru, Alexandra Bolocan, Daniel Ion, Octavian Andronic, Florentina Mușat

YOUNG INVESTIGATORS' AWARD – PRECLINICAL SPECIALITIES

ID936 Evaluating EEG reactivity to photic stimulation in sedated epileptic brain
Laurențiu Tofan, Alexandru Călin, Vlad-Petru Morozan, Alexandru Cătălin Pâslaru, Stancu Mihai, Ana-Maria Zăgrean, Leon Zăgrean, Mihai Moldovan

YOUNG INVESTIGATORS' AWARD – PHARMACY

ID880 Compassionate use programs at EU level: an analysis of their applicability in rare diseases
Beatrice Lascu, Sara Manellari, Umberto M. Musazzi, Robert Ancuceanu, Mihaela Dinu, Paola Minghetti

YOUNG INVESTIGATORS' AWARD – DENTAL MEDICINE

ID833 Teeth Tech: Artificial Intelligence's Sharp Eye for Detecting Alveolar Bone Levels in Panoramic Radiographs
Oana-Elena Burlacu-Vatamanu, Sorana Eftimie, Soroush Baseri Saadi, Rellyca Sola Gracea, Corina Marilena Cristache, Reinhilde Jacobs

ID873 Incidence of Anemia and Association with Perioperative Blood Products Requirements and ICU Length of Stay in Liver Transplant Patients – a Retrospective Observational Study

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Study objectives: In cirrhotic patients anemia is frequent, but often neglected disease. In different surgical fields, preoperative anemia was identified as an independent risk factor for post-operative morbidity and mortality, however this topic was less studied in cirrhotic patients undergoing liver transplantation (LTx). The study objectives were to assess the incidence and impact of pre-operative anemia in LTx patients.

Material and methods: 300 liver cirrhosis patients undergoing LTx were enrolled. The collected data included: recipient characteristics, preoperative complete blood counts, intraoperative bleeding and transfusion requirements, ICU length of stay (LOS).

Results: Patients included had mean (±SD) age 49.8 (±11.9) years and mean (±SD) MELD score 18.4 (±7.1) points. According to WHO criteria, 83.7% of patients had preoperative anemia, with 38.7%, 43.7% and 1.3% of patients having mild, moderate and respectively severe anemia. The severity of anemia increased with the severity of the liver disease as assessed by MELD score. Ferritin levels, mean corpuscular volume and hemoglobin were not different between anemic and non-anemic patients. Compared to patients without anemia, cirrhotic patients with anemia had higher red cell distribution width (median(IQR) 16.9(3.7) vs 14.7(2), $p<0.001$), lower blood iron levels (median(IQR) 85.5(105.9) vs 130.4(77.2), $p=0.008$), higher intraoperative blood loss and transfusion requirements (median(IQR) 4250(5425) vs 2500(3175)ml; 4(6) vs 1(3) U RBCs, $p<0.001$), and longer ICU LOS (median(IQR) 6(3) vs 5(2) days, $p<0.001$).

Conclusions: Diagnosis and correction of pre-operative anemia in LTx candidates may reduce intraoperative transfusion requirements and the duration of ICU stay, leading to cost savings for the health service.

SURGICAL SPECIALITIES

ID_941 Assessment of Medical Students' Knowledge for Polytrauma Cases in Romania: a Cross-sectional Study

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Polytrauma involves severe, multiple injuries affecting various body regions, often posing life-threatening risks. Prompt and accurate medical intervention is crucial for patient survival and recovery. Therefore, it is essential to evaluate the preparedness of medical students in managing polytrauma. This study aims to assess the theoretical knowledge and practical skills of final-year medical students in polytrauma management, identifying potential gaps in their academic training.

Materials and methods: A cross-sectional study was conducted using a questionnaire distributed to medical students from several medical universities in Romania such as Bucharest, Craiova, Iași, Timișoara, and Tg. Mureș. The questionnaire included multiple-choice questions, case studies, and practical scenarios. Data analysis was performed using statistical software such as SPSS.

Results: Preliminary results provide an overview of the average knowledge level in polytrauma management, highlighting strengths and weaknesses among the students and identifying specific areas needing further training. 82.5% of participants consider polytrauma an important topic in their medical training. During the evaluation of their theoretical knowledge, the respondents had a mean score of 61.85%. Furthermore, 96.6% would like to accumulate further expertise about polytrauma.

Conclusion: The study offers valuable insights into the preparedness of medical students in polytrauma management, helping academic institutions refine their curricula to better prepare future doctors for managing such critical medical situations.

PRECLINICAL SPECIALTIES

ID936 Evaluating EEG Reactivity to Photic Stimulation in Sedated Epileptic Patients

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The default mode network`s (DMN) can be investigated using default EEG reactivity (DER). The default oscillatory macrostate (DEM) is exemplified by the macrostate showing the highest decrease in occurrence probability during intermittent photic stimulation (IPS).

This study aimed to investigate DER, in the deeply sedated epileptic brain.

We used a genetic rat model of absence epilepsy, the adult Wistar Albino Glaxo Rijwijk (WAG/Rij) rat. Controls consisted of age-matched Wistar rats.

Deep aesthetic coma was induced by chloral hydrate. We performed cortical EEG recordings during the induced altered state of consciousness and the subsequent recovery. One eye received IPS in 1-minute epochs with 0.5 Hz. Visual evoked potential (VEP) was assessed by EEG of the fronto-occipital region contralateral to the stimulus while ipsilateral EEG was used to investigate DER by calculating the decrease in DEM occurrence ratio (DEMR) during IPS compared to a 1-minute epoch before stimulation. The fraction of time spent in suppression over 1-minute intervals defined the suppression ratio (SR) during BS.

The SR before stimulation was 50%-80%. DEM was represented by the suppression period of the BS so that DEMR was statistically indiscernible from SR. A decrease in DEM occurrence was caused by IPS without triggering spike-and-wave discharges. The DER was larger in WAG/Rij as compared to controls for the same DEMR before stimulation. The difference was decreased following ethosuximide.

Our data suggests that interictal functional abnormalities of the WAG/Rij brain could be detected by DER measurements with implications for the development of new antiseizure medications.

DENTAL MEDICINE

ID_833 Teeth Tech: Artificial Intelligence's Sharp Eye for Detecting Alveolar Bone Levels in Panoramic Radiographs

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Introduction: In dentistry, human abilities are now greatly enhanced with the help of artificial intelligence, which has proven to be effective and practical for diagnostics. This is achieved using machine learning to analyze vast amounts of data, identify patterns, and make accurate predictions. The aim of this study is to develop an artificial intelligence model able to identify the alveolar bone level on panoramic radiographs, thereby aiding in the diagnosis of periodontal diseases.

Material and methods: In this study we used panoramic image dataset for detecting periodontal bone level. Two evaluators manually delineated the area of the periodondal bone level of the maxilla and mandible using a labeling software (LableMe, MIT CSAIL, USA). Then we used a convolution neural network (CNN), the Ultralytics YOLOv8 framework to develop an image processing network for segmenting alveolar bone levels. The network was trained with a batch size of 64, using a dropout rate of 20% to enhance generalization. After completing the training, the CNN generated segmentation masks for the alveolar bone level in the input panoramic image.

Results: The approach was validated using 40 annotated panoramic images, providing 80 instances for evaluation.The YOLOv8 framework demonstrated high efficacy in delineating alveolar bone structures. For mandibular bone, the model achieved a bounding box precision of 0.94 and recall of 0.97, while for maxillary bone, precision was 0.97 with a recall of 0.96. Mask precision for mandibular and maxillary bones was 0.87 and 0.65, respectively, with mask recalls of 0.87 and 0.62.

Conclusion: This research showcases the promising integration of AI in dentistry, particularly for evaluating periodontal diseases through precise alveolar bone level identification. The YOLOv8 framework proved effective in generating accurate segmentation masks from panoramic images, offering dentists a reliable tool for enhanced diagnostic accuracy and treatment planning in periodontal care.

PHARMACY

880 Compassionate Use Programs at EU Level: an Analysis of Their Applicability in Rare Diseases

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Objective: Although the number of authorized orphan drugs increases every year, many rare diseases (RDs) are without an available treatment. With more than 6000 distinct RDs in the European Union (EU), affecting up to 36 million people, many patients are in the situation to use medicines while still in the clinical studies. We analyze and evaluate the theoretical and practical implications of compassionate use programs (CUPs), which can be activated in the EU countries based on Article 83 of the Regulation (EC) no. 726/2004.

Materials and methods: Patient access to designated orphan drugs were evaluated in 12 European countries from 2014 to 2023, throughout CUPs. The results were compared with programs notified to the European Medicines Agency (EMA) by Member States, based on a list received as a response to a Freedom of Information Request.

Results: CUPs for RDs represent 53.34% of the total of 583 CUPs activated in EU selected countries. Most programs were activated for RDs of groups blood and lymphatic system disorders (32.15%), congenital, familial and genetic disorders (22.82%), neoplasms benign, malignant and unspecified (18.97%) and nervous system disorders (9.64%). In terms of unique orphan drugs designated used throughout CUPs, most were found in Germany (56), France (49), Italy (45), Belgium (41), and Romania (26). The information collected from every country are not congruent with those received from the EMA; only six countries from the analyzed list notified the Agency.

Conclusion: The application of Regulation (EC) No. 726/2004 is heterogeneous among EU countries. The possibility for EU countries to set their own rules on compassionate use is a possible source of inequalities in access to medicines still under development. A harmonization of legislative frameworks, along with a dedicated register of medicines used in CUPs, could bring benefits to patients with RDs.

Autism – New Approaches for Automatic Interpretation of the Affective State

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In the context in which some studies demonstrated that humanoid robots can effectively assist children with autism in understanding their emotional states, this paper highlights and validates the effectiveness of a previously developed machine learning-based mobile application called PandaSays. This application was enhanced and integrated with an Alpha 1 Pro robot. The paper discusses performance evaluations using deep convolutional neural networks and residual neural networks. The model trained with the MobileNet convolutional neural network achieved an accuracy of 56.25%, outperforming ResNet50 and VGG16. Additionally, a strategy was developed to control the Alpha 1 Pro robot without its native application, involving the creation of a robot module that includes communication protocols with the PandaSays application. The output from the machine learning algorithm in PandaSays is transmitted to the humanoid robot to perform actions such as singing and dancing. The Alpha 1 Pro robot uses its programming language, Blockly, and commands are issued via Bluetooth programming with the help of a Raspberry Pi. This allows for precise control of the robot's movements based on the established protocols. Testing has demonstrated the robustness of the entire solution.

Cloud-Connected Bracelet for Continuous Monitoring of Parkinson's Disease Patients

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Parkinson's disease (PD) is one of the most persistent and progressive neurodegenerative conditions affecting humans. Various wearable IoT devices have been developed to detect, diagnose, and quantify PD, primarily using inertial sensors and computational algorithms. However, the widespread use of these devices introduces new challenges related to security, privacy, connectivity, and power efficiency. Clinically, it's crucial to continuously monitor patients' motor functions to optimize Levodopa (L-dopa) dosage while minimizing side effects and preventing motor activity decline. Monitoring changes in motor function between medical visits is difficult, which can lead to inaccurate clinical decisions. Therefore, there is a significant need for a system that enables healthcare professionals to comprehensively evaluate Parkinson's stages and monitor disease progression, especially in terms of tremor and bradykinesia. This study aims to create a comprehensive ecosystem centered around an energy-efficient, Wi-Fi-enabled wearable bracelet called A-WEAR. A-WEAR collects motion data related to Parkinson's, securely transmits it to the Cloud for storage, processing, and severity estimation using custom learning algorithms. The experimental results show that the proposed method is robust and effective, with an accuracy of 86.4% for bradykinesia and 90.9% for tremor estimation, as well as high sensitivity and specificity for each assessment category. This approach will assist in the timely assessment of PD severity and ongoing monitoring of patient activity. The system aids medical professionals in making informed decisions when initially evaluating PD patients and reviewing their progress and treatment outcomes.

Hybrid ANFIS-GA Approach for Medical Image Diagnosis Enhanced by Deep Network Feature Extraction

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Early-stage disease prediction is crucial for effective treatment. This paper introduces a new model that leverages advances in deep learning and fuzzy logic for disease assessment. The model combines an adaptive neuro-fuzzy inference system (ANFIS) optimized by a genetic algorithm (GA) for classification, with feature extraction performed by the pre-trained DenseNet-201 model, and feature selection using the whale optimization algorithm (WOA). The model was tested using two medical datasets (chest X-ray and MRI brain tumor) for diagnosing two types of diseases. GA was used to optimize ANFIS parameters, enhancing its predictive accuracy, while DenseNet-201 improved classification precision through feature extraction. To address the issue of feature overload, which can reduce accuracy, WOA was applied for feature selection, yielding favorable results. The model's performance was evaluated using statistical metrics such as root mean square error (RMSE), mean square error (MSE), standard deviation (STD), and the coefficient of determination (R^2). When compared to the traditional ANFIS model, the proposed ANFIS-GA model demonstrated superior predictive capabilities. Therefore, the study concludes that the ANFIS-GA model is both efficient and effective in disease evaluation with high accuracy. Additionally, it confirms that integrating optimization algorithms with ANFIS enhances its performance, resulting in a more accurate and dependable model.

Exploring Muscle-Computer Interfaces for Therapeutic Assessment in Microgravity: A Deep-Tech Approach to Masticatory Muscle Atrophy

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Exposure to microgravity has been shown to present physiological symptoms similar to those related to aging-related pathophysiological changes. Microgravity-induced muscular and skeletal atrophy has been extensively studied in posturally-important areas such as the lower body, but effects experienced in the masticatory muscles of the oral cavity and face have been often overlooked, despite being a relatively common symptomology in both astronaut and aging populations. This study proposes a muscle-computer interface (muCI) definition as an advanced deep-tech method to assess treatment efficacy of masticatory muscle atrophy using several non-invasive therapeutic methods such as transcranial magnetic stimulation (TMS) and transcranial direct current stimulation (tDCS), therapeutic methods which have shown promise in treating conditions such as post-stroke dysphagia, glossodynia, sleep bruxism, and obstructive sleep apnea. muCIs are defined as systems that translate muscle activity into commands for a computer system, enabling biofeedback which can drive automated or semi-automated adjustments to treatment protocols. Techniques like surface electromyography (sEMG) and sonomyography are well-studied in this context, and when utilized under expert supervision, they offer significant promise for personalized treatment assessment and adaptation. We propose an exploratory study to investigate the potential of muCIs as part of a human-in-the-loop deep-tech framework for evaluating TMS and tDCS therapies under simulated microgravity conditions, which provides valuable experimental evidence for both astronaut and aging populations. The proposed muCIs will help develop effective therapeutic protocols that mitigate the psychosomatic symptoms of the masticatory muscles associated with real and simulated microgravity exposure.

Exploring Myotonometry Specific Applications and Future Perspectives in Non-Invasive Muscle Assessment

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Myotonometry is a key method for non-invasive assessment of muscle mechanical properties, offering precise measurements of muscle stiffness, tone, and elasticity. MusTone myotonometric device, developed at the Institute of Space Science – INFLPR Subsidiary, offers accurate and reproducible data across various clinical contexts, making it essential in evaluating muscle health among space crew, athletes, the elderly, and patients with neuromuscular disorders. Studies have consistently demonstrated the high reliability of the device, particularly in assessing muscle properties in conditions such as sarcopenia and post injury medical recovery. This reliability underscores the utility of myotonometry in both diagnostic and therapeutic applications, enabling precise monitoring of muscle changes over time and evaluating the effectiveness of interventions.

The MusTone muscle analysis device is engineered to evaluate muscle mechanical properties by applying a controlled mechanical impulse and analyzing the resulting mechanical waves. This device has been successfully employed in two Dry Immersion experiments conducted at terrestrial facilities simulating microgravity conditions: a 5-day immersion at the French Institute for Space Medicine and Physiology and a 21-day immersion at the Institute for Biomedical Problems of the Russian Academy. Key parameters extracted from these experiments include relaxation time after mechanical stress, the ratio between deformation and relaxation times of the muscle, oscillation frequency, and logarithmic decrement. Particularly significant are the MusTone-specific parameters, such as velocity and amortization ratio, which provide critical insights into muscle performance and resilience.

The future of the MusTone device lies in enhancing its portability and data analytics, enabling broader applications in personalized medicine and remote muscle health monitoring.

Tumor-on-Chip Models for Testing Cancer Cell Behavior in Tridimensional Environments

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Glass and polymer-based biochip platforms provide both observation of collective cancer cell migration over long periods of time in in vivo-like environments and a more detailed microscopic visualization at unicellular level for a target cell, at the desired spatial (micro- to nanometric) and temporal (minutes to seconds) scales. One may then exploit new laser fabrication technologies to create hierarchical tumor-on-chip configurations mimicking intravasation-extravasation metastatic environment to observe cancer cells behavior in confined spaces. Further, cell-specific morphological deformations can be correlated during migration to understand metastasis process mechanisms or to test innovative radiotherapeutic schemes such as FLASH radiotherapy. Herein, subtractive and additive laser techniques were employed to fabricate glass biochips. Specifically, the subtractive technique fabricated hierarchical geometries with constricted channel widths of less than 1m. In such platforms we were able to observe cancer cells breaching submicrometric intravasation-like barriers while retaining their viability and proliferation activity. Meanwhile, we have proposed to use tissue-like polymer configurations fabricated by the additive techniques for monitoring cancer cell migration and invasion potential, correlating the higher cell motility on collagen containing scaffolds with cell invasive potential. We propose such tumor-on-a-chip models to explore the molecular and cellular mechanisms behind cellular response to unconventional FLASH radiotherapy schemes, with the view of applying them as novel radiotherapy modalities against radioresistant cells and deep-seated tumors.

A Fiber Optic- Surface Plasmon Resonance (FO-SPR) Sensing Tool for Biomedical Applications

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Fiber Optic – Surface Plasmon Resonance (FO-SPR) technology is an exceptional optical sensing instrument applied in various fields, including life science, the agro-food sector, and medical diagnostics. This is due to its capacity to facilitate the efficient characterization and real-time quantification of various biological entities. Thus, the potential applications of this technology are numerous and diverse, spanning the study of interactions between proteins, lipids, nucleic acids, and even low-molecular-weight molecules such as drugs. Furthermore, this analytical system exhibits additional advantageous characteristics, including cost-effectiveness, compact instrumentation, immunity to electromagnetic interference, and remote sensing capabilities. In the FO-SPR technology, light is guided through a metal-coated multimode FO, resulting in the generation of propagating plasmonic waves at the interface with the analyzing environment. Subsequently, any biological interaction occurring at this interface is reflected in a change in the refractive index of light, which is then processed into a graphical representation. The developed FO-SPR sensor can be applied in an automated setup for both immuno- and aptamer-based bioassays, offering a competitive alternative to the ELISA and PCR standards.

Hence, we employed these sensors to detect allergens (Ara h 1 peanut allergen), pathogens (SARS-COV-2 coronavirus), for pH monitoring and heavy metals (Co^{2+}, Cd^{2+}, Cu^{2+}, etc.) screening, to mention a few biomedical applications. Moreover, these sensors also play a key role in the nanoparticle preparation process, since they can monitor synthesis reactions and surface modifications, enabling precise measurement of interactions between nanoparticles and biomolecules, including binding affinities and kinetic parameters. For example, the FO-SPR sensors were used to investigate the interactions of L-cysteine- or citric acid- coated iron oxide nanoparticles with doxorubicin, to be applied further in anti-melanoma therapies. The ongoing advancement and optimization of such FO-SPR biosensors offer significant potential for expanded applications in the future.

Alteration in the Foreign Body Response Induced by Breast Implant Shell Surface Topography Modification

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Nowadays, special attention is given to increasing the complexity of the surface's topography targeting a distinct alteration in the pathophysiology of the foreign body response, ultimately yielding a diminished inflammatory response in contrast to the more prevalent commercially available silicone implant surfaces.

Therefore, the present study proposes new microtextured PDMS-based shell interfaces obtained by replication using an innovative laser-based 3D fabrication assisted by the gray-scale mask process for moulds obtaining. In this regard, microscale features of hexagonal matrices were accurately and reproducibly replicated in PDMS. As the formation of the fibrotic tissue around the implanted biomaterial represents one of the most common causes for device failure, the fibroblast activation-suppressing features of the newly developed microtextured surface was investigated in comparison to the smooth PDMS using the CCD-1070Sk fibroblasts. Additionally, since in the progression of FBR, macrophages are involved both in the regulation of inflammation and healing, the behaviour of the RAW 264.7 macrophages was also investigated through direct contact studies. Given the fact that bacterial infection is implicated in the fibrotic response to implants and the development of BIA-ALCL, the hindering effect of PDMS structuring on biofilm formation was assessed against three standard strains, namely Staphylococcus aureus (S. aureus), Escherichia coli (E.coli), and Candida albicans (C. albicans).

Altogether, this unique study aims at demonstrating that the fibroblast's response to silicone topographies can be tailored to induce physiological changes in cells, thus paving the way for further research focused on developing biomaterials capable of eliminating the capsular contracture by subverting FBR.

The Impact of 5G-Connected Drones, AI and IoT in Life-Threatening Emergencies

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This academic research investigates the transformative potential of integrating 5G connectivity, Artificial Intelligence (AI), and the Internet of Things (IoT) in life-threatening emergency scenarios, with a particular focus on drone-based medical interventions. The study highlights the critical role of 5G-connected drones in search and rescue, especially for remote mountain areas, or for rapid delivery of medical supplies or probes, significantly enhancing the speed and precision of emergency medical responses. Building on foundational work in AI-driven search and rescue operations, where missing people are automatically identified in photograms captured by drones, this research explores the next frontier: the deployment of medical drones in urban and remote environments. These drones, powered by 5G, enable real-time, low-latency communication, ensuring the fastest intervention for those in need with unprecedented speed.

The proposed system architecture utilizes IoT systems, which are reinforced by AI algorithms to optimize decision-making during emergencies. The integration of 5G technology not only supports the real-time transmission of critical data but also empowers drones to autonomously navigate complex environments, reducing human intervention and potential delays. Our findings indicate that the convergence of 5G, AI, and IoT in drone technology represents a paradigm shift in emergency medical services. This research proves the potential of these advancements to revolutionize the first response, particularly in scenarios where time is of the essence and traditional methods are insufficient. The implications of this study are profound, offering a glimpse into the future of emergency medical interventions and the vital role of technology in saving lives.

Medical Drone with Electric Propulsion System for Rapid Evacuation

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In life-threatening situations, medical evacuation is crucial. Rescue, military, and police prevention teams risk their lives to save the injured or threatened. Another team member usually alerts medical evacuation officials of an occurrence that threatens a team member's health.

In our paper, we propose a conceptual solution of a drone („aerostretcher") with the role of rapid evacuation of patients who require emergency medical help and for whom there are no other means of evacuation available.

The stretcher is represented by a modular, electrically powered air transport system that can be used to evacuate patients from places where the current air medical resource cannot be used (eg: MEDEVAC).

The propulsion system supports the weight of a patient of up to 85 kg. Above this weight, coupling with another similar drone is recommended. The two devices will be rigidly connected, overlapped at 90 degrees, but also modulated by software to collaborate in flight.

The safety of the patient in flight can be supplemented by the addition of airbag-type elements, arranged under each propulsion system, which provide protection in the event of an impact caused by complete or partial failure of the propulsion system.

Depending on the specifics of the intervention area, the airbags can be replaced with elements that allow buoyancy for areas of flight over water and use in MEDEVAC activities at sea.

The stretcher will have a telemetry system capable of providing telemedicine support with the medical crew at the reception.

Using Knowledge Graphs and Neural Networks for Enhanced Medical Research and Discovery

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Advancements in technology and software have profoundly supported and transformed various scientific domains, including medical research, by providing innovative methodologies for expanding scientific knowledge. A significant aspect of this progress involves addressing the challenges associated with processing and analyzing extensive volumes of medical data, a task that has historically been complex and resource-intensive for researchers. Neural networks, particularly those employing transformer architectures, have revolutionised data processing capabilities, facilitating the development of large language models (LLMs) capable of managing substantial amounts of information effectively.

In this study, we investigate the integration of Knowledge Graphs and Neural Networks to improve the efficiency and accuracy of medical research analysis. By utilizing vector and graph databases, we construct Retrieval-Augmented Generation (RAG) systems that reveal previously unrecognized relationships and patterns within medical studies. These systems enable the simultaneous processing of up to one million tokens, equivalent to analyzing the entire Romanian Explanatory Dictionary (DEX). This capability represents a significant advancement in synthesizing and interrogating extensive research data sets.

Our poster presents a case study wherein a collection of scientific medical research papers is transformed into a comprehensive knowledge base using graph theory principles. This structured knowledge base provides a robust contextual framework, enabling AI systems to systematically read, interpret, and interact with the research literature, thereby uncovering novel insights and expediting the pace of medical discoveries. This approach holds substantial potential for improving diagnostic processes and advancing the overall field of medical science through enhanced data-driven exploration.

ID836 ASSESSING the Impact of a Digital Mobile Application on Children's Adherence to Dental Brushing: a Questionnaire-Based Analysis

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Objectives: Early dental education and proper brushing are essential for children's oral health. This study investigates the enhancement of children's compliance with dental brushing through the evaluation of a digital educational application, using questionnaires and plaque index as objective measures of the technology's effectiveness.

Methods: The study enrolled 30 children (ages 6 to 12) whose parents provided informed consent. Participants were given access to a digital brushing application. The application, featuring the character Sparkly, connected via Bluetooth to a mobile phone, teaches correct brushing techniques through animations and engaging rewards designed to help establish a routine. The integrated timer, with a 2-minute countdown and 30-second interval indicators, encourages adherence to brushing time, while the rapid brushing action ensures effective cleaning.

Participants were initially assessed using plaque index indicators and a parental questionnaire to establish baseline knowledge and oral hygiene practices. After a 4-week period of application use, the assessments were repeated to evaluate the application's impact on brushing habits.

Results: Analysis of pre- and post-use questionnaires revealed significant improvements in brushing techniques and general oral hygiene knowledge. Children reported increased brushing frequency and a better understanding of its importance. 98% of parents indicated that the application motivated their children to brush better and for longer periods. There was a statistically significant reduction in plaque index scores.

Conclusions: The use of the digital brushing application proved to be an effective method for improving oral hygiene. The real-time feedback and interactivity of the application significantly contributed to the development of healthy dental habits. Broad implementation of such technologies could transform pediatric dental education, making it more engaging and effective. This study suggests that digitalization of children's oral hygiene programs could lead to long-term positive outcomes.

ID877 Effects of Monolithic Zirconia Surface Treatments on the Biological Behaviour of Human Gingival Fibroblasts

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Objectives: The aim of this study was to evaluate the influence that certain surface treatments of monolithic zirconia have on human gingival fibroblasts, specifically on cell viability, nitric oxide (NO) and lactate dehydrogenase (LDH) levels.

Materials and methods: Cylindrical samples (Φ/h=10/2mm) of sintered monolithic zirconia (n=36) (Katana™ Zirconia STML, Kuraray Noritake Dental Inc., Tokyo, Japan) and titanium alloy samples (n=9) (Starbond Ti5 Disc, Scheftner Dental Alloys GmbH, Mainz, Germany) were manufactured using CAD/CAM technology. The zirconia samples were divided into four groups, based on the performed surface interventions: no interventions (group 1), sandblasting (group 2), polishing (group 3), polishing and glazing (group 4). In this study, the HFIB-G cell line (human gingival fibroblasts) from Provitro GmbH (Berlin, Germany) was used. After 24 and 48 hours of incubating the fibroblasts with the dental materials, the following experimental tests were conducted: MTT assay (cell viability assessment), Griess test (NO concentration analysis), and LDH test (LDH level assessment). The control group consisted of cells not exposed to dental materials.

Results: At 24 hours of exposure, the cell viability levels, reported as a percentage compared to the control group, were as follows: 91.28% for titanium alloy; 86.92% for group 3/polished zirconia; 82.38% - for group 1/sintered zirconia; 80.58% for group 4/glazed zirconia; 80.31% for group 2/sandblasted zirconia. After 48 hours, the lowest level of cell viability was recorded in group 3, with a decrease of approximately 25%, compared to the control group. The NO and LDH levels at 24 and 48 hours indicated that there were no significant changes compared to the control group.

Conclusions: The tested materials are not considered potentially cytotoxic, according to the ISO 10993-1:2018 standard; furthermore, these materials do not have a potential inflammatory effect (as indicated by the recorded NO levels) and do not adversely affect LDH levels.

ID894 Investigation of Potentially Pathogenic Bacteria in Nasal, Pharyngeal and Hand Swab Samples from Healthy Dental Students

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Objective: The aim of the study was to investigate potentially pathogenic bacteria in swab samples collected from the nose, pharynx and hand of second year students of the Faculty of Dentistry, "Carol Davila" University of Medicine and Pharmacy (UMFCD) - Bucharest.

Methods: Swab samples from the nose, pharynx and dominant hand were collected from 80 students, in June 2023. Samples were cultured for bacteria on non-selective media: Columbia Blood Agar and Mueller-Hinton Chocolate Agar (Liofilchem, Italy) and some selective media. Isolates were identified to genus/species level by conventional methods and API systems (BioMeriéux, France).

Results: The potentially pathogenic isolates were: *Staphylococcus aureus* (4 strains from the hand, 12 nasal strains and 13 pharyngeal strains, of which only one was methicillin-resistant, MRSA), *Streptococcus pneumoniae* (1 nasal strain), *Enterococcus faecalis* (1 strain from the hand), *Moraxella catarrhalis* (2 nasal and 2 pharyngeal strains), *Haemophilus parainfluenzae* (3 nasal and 3 pharyngeal strains), *Klebsiella* (3 nasal and 2 pharyngeal strains, and 1 strain from the hand), *Enterobacter* (2 strains from the hand), *Proteus* (1 strain from the hand) and *Pseudomonas stutzeri* (2 strains from the hand). Five students showed double carriage of *S. aureus* as follows: nasal + pharyngeal carriage (3 students), nasal + hand carriage (1 student) and pharyngeal + hand carriage (1 student), but with different strains.

Conclusion: In this group of students, 30% were carriers of *S. aureus*, but only one student of MRSA. Other potentially pathogenic bacteria (enterococci, pneumococci, *M. catarrhalis*, *Haemophilus*, *Pseudomonas* and members of *Enterobacteriaceae*) were isolated from 26.25% students. Dental students should be made aware of the risk of cross-infection in dental units as early as the pre-clinical years.

Acknowledgments: This study is part of an undergraduate thesis conducted within the Department of Microbiology of the Faculty of Dentistry, to be defended at UMFCD-Bucharest, in September 2024.

ID937 Assessment of the Awareness Level Regarding Periodontal Disease Among a Group of Patients with Diabetes Mellitus

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Aim: Asssessment of the diabetes patients' attitude and knowledge regarding periodontal health.

Materials and methods: The study was conducted in April-May 2024 on a group of 100 Romanian patients with diabetes mellitus, with a mean age of 58.43 ± 15.91 years, 50% females, 65% urban area residents. The assessment was performed using a 23-item questionnaire.

Results: Regarding the self-assessed level of knowledge regarding the association between diabetes and periodontal disease, 31% consider themselves inadequately informed and 34% uninformed.

With respect to the attitude on the association between diabetes mellitus and periodontitis, 61% of the participants are aware of the effect of periodontal diseases on the evolution of diabetes and only 50% acknowledge the positive effect of periodontal treatment on the evolution of diabetes.

On the other hand, only 34% are aware of the effect of diabetes on the debut of periodontal inflammation and 26% on the increased inflammatory response specific for periodontitis.

When it comes to the dental attendance, 54% had a dental check-up after the diagnosis of diabetes, 44% of the participants received from the diabetes specialist a recommendation for a dental evaluation while 36% for a specific periodontal evaluation.

Conclusion: In the studied group, there was a lack of awareness and an insufficient knowledge regarding the association of diabetes mellitus and periodontal disease.

ID939 Digitalization Limits in Single Lateral Dental Restorations

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Traditionally, dental restorations were produced through elastic impressions made by dentist, then the dental technicians were pouring the models, made the wax pattern and finally cast/ heat press or bake the final crown. All these steps are time-consuming and not 100% accurate.

The current digital transformations means that dentists use intraoral scanning for impressions and dental technicians make restorations through CAD-CAM (computer aided design/ computer aided manufacturing) which reduces the production process steps. This change was possible only with the evolution of dental materials.

The **aim** of the study is to determine the limits of digital crowns from dentists, dental technicians and patients' point of view.

Methods: A case report based on a comprehensive questionnaire designed to gather feedback from 5 dentists and their dental technician teams about the treatment of random 50 patients with 50 zirconia lateral digital crowns.

Results: Dentists and dental technicians need additional proper training in the use of intraoral/ extraoral scanning of impressions and CAD/ CAM technology; the learning curve is different from person to person. Patients have only great benefits: high accuracy, less time consuming.

Conclusions: Dentistry is increasingly adopting digital treatment modalities, which represent a significant transformation. The major change is related to processing stages, but the dentist and the dental technicians are still very important regarding the design and the adjustments of restorations. Single and simple restoration cases can use a fully digitized CAD/CAM system.

Innovative Materials and Technologies for Health: Concerns, Challenges and Perspectives

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Due to the widespread occurrence of hospital-acquired infections, there is a pressing need for innovative interdisciplinary strategies to prevent the spread of pathogens. Nanotechnology offers promising solutions, particularly in the development of antimicrobial agents.

This study presents the synthesis and characterization of copper-gold nanoparticles (Cu-Au NPs) solution using a green, radiation-based method at INCDIE ICPE-CA. The nanoparticles exhibited excellent antimicrobial properties against a range of bacteria, viruses, and fungi, according to specific standards applied in medical area and validated by accredited laboratories: i) significant reduction in bacterial counts (log 5) for Staphylococcus aureus, Pseudomonas aeruginosa, and Enterococcus Hirae; ii) viral inactivation (log 5) for enveloped viruses like Adenovirus type 5, Murine Norovirus, and human Coronavirus 229E; iii) effectively inhibited the growth of Candida albicans (log 4). Moreover, the Cu-Au NPs solution presented prolonged effectiveness, maintaining decontamination on surfaces for over 48 hours.

These results highlight the potential of Cu-Au NPs as a promising disinfectant for hospital decontamination and public space sanitation. Their effectiveness against a broad spectrum of pathogens suggests their potential in combating pandemic crises, such as COVID-19, as well as other nosocomial infectious diseases.

Metal nanoparticles hold significant potential for a wide range of biomedical applications, including drug delivery carriers, improving drug bioavailability and targeting specific tissues. Additionally, metal nanoparticles can be employed in biosensing, diagnostics, and imaging, providing enhanced sensitivity and specificity or as powerful antimicrobial agents, especially in wound dressings and medical device coatings, to help prevent infections.

Small Molecule Inhibitors Targeting TG2 in Ovarian Cancer and Identification of Drug Escape Pathways

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Most patients with ovarian cancer (OC) present with intraperitoneal disseminated disease when diagnosed. They respond efficiently to cisplatin or taxol-based compounds in the frontline treatment; however, resistance emerges in most cases. There is an urgent need for improved treatment to increase patients' chances of survival. Tissue transglutaminase (TG2) is a protein overexpressed in many solid tumors, including ovarian. Besides its known cancer cell expression, we recently identified TG2 in a cancer associated fibroblast subset and in cells surrounding the blood vessels using multiplex immunohistochemistry. TG2 interacts with fibronectin (FN) in the extracellular matrix and promotes OC intraperitoneal dissemination. In TG2-KO mice, we found decreased tumor progression and increased T cell activation (Sima LE et al. (2021) JITC). This makes TG2 a potential target for treatment. We previously identified MT4 as a promising small molecule inhibitor (SMI) able to disrupt TG2-FN protein-protein interaction. When testing the effect of 5 new MT4 analogues, we found that compound #3011 totally prevented spheroids formation, like Tgm2 gene excision, while #3002 decreased cell adhesion onto FN. We used phosphoproteomics to analyze the adaptive signaling in non-responding cells upon MT4 exposure. We successfully identified effectors of MT4 escape pathways. Combination of signaling inhibitors and TG2-directed SMIs induce OC cell death in both 2D and 3D conditions, with potential for future therapeutic use. We developed a microfluidic chip and adapted a mesothelial clearance assay to test drug combinations, as well as radiation therapy regimens for their potential to inhibit cancer spreading.

Research on Medical Applications of High-Power Lasers at ELI-NP

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The potential of high-power (TW to multi-PW) lasers for medical applications has been anticipated from the beginnings of the field about two decades ago. A long-term research program at ELI-NP is aiming to investigate three major medical applications of high power lasers. Firstly, radiotherapy with laser accelerated carbon ions may allow more patients to benefit from this most advanced cancer treatment modality. In addition, the hyper-high dose rate delivery possible with lasers may be expected to induce the FLASH tissue sparing effect. Further on, directional and bright, „all-optical" laser-driven X-ray sources based on the betatron or Inverse Compton mechanisms, may enable clinical implementation of high sensitivity and low dose interferometric imaging for applications such as mammography or image guidance in radiotherapy. Lastly, laser-based production of medical radioisotopes may enable more affordable and widespread use of nuclear medicine diagnostic and treatment modalities.

The medically oriented research at ELI-NP will also guide the development of future laser-based medical diagnostic and treatment facilities. In particular, a pilot research Center on medical applications of high-power lasers is envisioned at ELI-NP, aiming to take the results of the above research towards the preclinical and, in the long term, the clinical testing stage. The motivation and foundation for high power laser-based medical applications, the ELI-NP research plans, and first preparatory results will be presented.

Towards High Sensitivity and Low Dose Medical Imaging with Laser X-Ray Sources

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Phase contrast X-ray imaging (PXI) based on refraction can be much more sensitive to soft tissue lesions than conventional X-ray imaging based on absorption, being a promising tool for medical diagnostics. In addition, because PXI utilizes the transmitted radiation, the radiation dose can be reduced by using higher X-ray energy for imaging. The PXI technique best suited for clinical implementation is Talbot-Lau (TL) grating interferometry. Current TL setups utilize 1-2 m long interferometers and relatively high radiation doses. We show that by using much longer interferometers one can strongly increase the phase sensitivity and lower the dose in soft tissue imaging applications, such as mammography. Utilizing a 6 m long, 2.4 μm period interferometer, in conjunction with a conventional X-ray tube and long integration times, we could dramatically increase the contrast-to-noise ratio of objects simulating breast tumors, while simultaneously lowering the dose. Conventional X-ray tubes do not provide, however, sufficient X-ray flux for clinical imaging with such long interferometers. Instead, 100-TW class lasers may provide the highly directional and intense X-ray sources needed for high-sensitivity medical interferometry. We discuss the X-ray source characteristics required for clinical interferometry, the advantages and disadvantages of betatron versus inverse Compton scattering mechanisms for clinical X-ray sources, and the plans at ELI-NP for preclinical and clinical testing of laser-based, high sensitivity and low dose interferometric mammography.

Particle physics meets medical physics

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Silicon-based detectors were initially developed to track particles in experiments from the CERN Large Hadron Collider. However, this technology demonstrated a great potential outside of high-energy physics. Different devices were developed for a wide range of applications including X-ray imaging at rates compatible with medical CT scan, space applications, and material analysis. In addition, the particle physics community first responded to the pandemic by mobilizing its computational power and allocating processors from CERN's data centers, the LHC experiments, and the Worldwide LHC Computing Grid to support volunteer computing initiatives like Folding@home and Rosetta@home, which model protein dynamics to shed light on the SARS- CoV-2 virus. In this poster, the latest silicon-based detectors built for medical applications and various computing infrastructures will be presented and discussed.

Technical Aspects Regarding the Support of the Medical Management of Exposed People and Emergency Workers (First Responders)

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To be effectively implemented, emergency medical response needs to be planned and organized to include a consideration of the potential consequences of different types of nuclear or radiological emergencies. As part of general emergency preparedness and response, medical response needs to take the same approach to planning as stipulated in the international requirements for preparedness for and response to a nuclear or radiological emergency for all response organizations.

The purpose of this paper is to research and to identify potential methods to support the medical management of exposed people and emergency workers. Public health issues should be addressed, such as the medical follow-up of persons involved in nuclear or radiological emergencies based on set of specific criteria. As example, one of the specific criteria like the dose received by individual may be difficult to determine. However, developing specific methods taking into account the history, contamination survey, and survey of the site of the incident as well as clinical findings such as physical examination and blood counts, reasonable dose estimates may be developed.

For restricting the exposure of emergency workers, according with the international standards and national regulations the total effective dose and the relative biological effectiveness (RBE) weighted absorbed dose to an organ or tissue via all exposure pathways (i.e. both dose from external exposure and committed dose from intakes) need to be estimated as early as possible.

One of the challenges faced in the implementation is to develop a method on how to adapt the guidance value for $H_p(10)$ in order to control the health risk to the emergency worker when both external and internal exposure are involved.