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Chemical Composition and Antioxidant Activity of Indigenous *RAMARIA BOTRYTIS* (Pers.) Ricke (Clustered Coral) Mushroom

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Objectives: The aim of our study was the phytochemical screening, evaluation of total phenolic content and antioxidant capacity of different extracts obtained from *Ramaria botrytis* (clustered coral) mushroom.

Materials and methods: The mushroom was collected in August 2019, from Morărești village, Arges county, Romania. For further analysis it was freeze-dried. Several dry extracts were obtained using water (RE), 50% ethanol (RE50) and 80% ethanol (RE80) as solvents. The phytochemical screening was determined based on qualitative (specific chemical reactions) and quantitative analysis (spectrophotometric determination of the total phenolic content – expressed as tannic acid equivalents). The antioxidant activity was determined based on the scavenger capacity towards 2,2-diphenyl-1-picryl hydrazyl (DPPH) free radical, ABTS free radical and ferric reducing power assays.

Results: The extraction yield for all extracts was above 20%. All dry extracts are a source of phenolic compounds and polysaccharides. Moreover, RE50 and RE80 also contain free sterols. Regarding the quantitative assays, the total phenolic content decreased as follows 4.07 g% (RE80) > 3.66 g% (RA) > 3.32 g% (RE50). Regarding the antioxidant activity, by means of DPPH and ferric reducing power RE50 and RE80 showed similar results (EC50 ~ 0.40 mg/ml for ferric reducing power and EC50 ~ 0.60 mg/ml for DPPH assay). However, RE80 showed the highest antioxidant activity based on ABTS scavenging properties.

Conclusions: Analyzed extracts are an important source of bioactive compounds with antioxidant activity. Still, the solvent is a key factor that significantly influences the phenolic content and antioxidant properties. Our preliminary results are valuable in order to obtain further hydroalcoholic dry extracts, that will be analyzed (*in vitro* and *in vivo*) for their antioxidant activity, regarding their beneficial role in different diseases, for which oxidative stress is a key factor.

Influence of Caffeine on Innovative Cream Bases

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Objectives: Incorporation of caffeine into two innovative cream bases FitaliteTM – natural hydrophilic gel-cream base and EmolivanTM – natural cold cream base W/O type and their organoleptic and physico-chemical evaluation to analyze the compatibility between the base and the active substance and to identify a possible synergism.

Method: The samples consisted of the 2 cream bases mixed automatically using the EMP applicator at rotation speed 5, for 3 minutes, with different concentrations of caffeine: 2.5%; 5% and 7.5% dispersed in 2, 4 and 6 g glycerin respectively. The organoleptic characteristics were determined according to FR, density by gravimetric method, pH by pH-meter, spreadability by extensiometric method, viscosity by B One Plus Plus rotary viscometer and induction period with Velp Oxitester, at 90°C and 6 atm.

Results: The creams enriched with caffeine were physically evaluated regarding color (white), odor (pleasant), texture (homogeneous), pharmaceutical form (semisolid), homogeneity (homogeneous), spreadability (addition of caffeine improved spreadability in the case of Emolivan and decreased it in the case of Fitalite), density (decreased in Emolivan and increased in Fitalite) and pH (increased in the case of both cream bases). All formulas have pseudoplastic behavior, viscosity decreasing with the addition of caffeine in the case of both bases. In contrast, oxidation stability was greatly improved.

Conclusions: Caffeine can be successfully incorporated into innovative cream bases, giving them beneficial properties, depending on the desired use.

Formulation, Preparation Technology, Pharmaco-Technical and Toxicological Analysis of Lipsticks Containing Plant-Based Colorants Extracted by Two Different Methods from Red Beet Root, Red Cabbage Leaves and Black Grape Pericarp

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This study aims to develop, formulate, and evaluate a natural cosmetic product – specifically lipsticks – using plant-derived pigments extracted from red beetroot roots, red cabbage leaves, and black grape skins. The primary objective is to produce a non-toxic, plant-based lipstick formulation suitable for topical use.

Two sets of lipsticks, each comprising three formulations, were prepared for comparative analysis. In the first set, the coloring agents were obtained through hydroalcoholic extraction of plant material, followed by lyophilization. In the second set, plant pigments were incorporated in the form of dried vegetable powders, produced by drying, grinding, and sieving the respective plant materials.

The lipstick production process involved the conventional melting and casting method. Comprehensive quality control assessments were conducted, including pH measurement, organoleptic evaluation, determination of melting point, fracture resistance testing, color intensity analysis, and color transfer evaluation.

To ensure the safety of the formulations, a toxicological assessment was performed, focusing on the detection of heavy metal contaminants – specifically lead (Pb), arsenic (As), and nickel (Ni). The analysis involved the destruction of organic matter using a Deniges microwave digestion system, followed by quantification via atomic absorption spectrometry. The levels of heavy metals detected complied with national safety standards for cosmetic products.

In conclusion, six lipstick formulations were successfully developed and met the required quality parameters. The products exhibited pH values compatible with human skin, showed no evidence of toxicity, and were deemed safe for topical application, with no observed potential for irritation or adverse local reactions.

Synthesis, Characterization and Evaluation of Biological Activity of Some 2-Thiopheneacetic Acid Derivatives

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Objectives: The aim of this study was the synthesis, characterization and evaluation of biological activity (antioxidant, antibacterian and antifungic properties) of two 2-thiopheneacetic acid derivatives.

Material and methods: Two compounds, N-((2-propylphenyl)carbamothioyl)-2-(thiophene-2-yl) acetamide (encoded 2c) and N-((2,4,6-trimethylphenyl)carbamothioyl)-2-(thiophene-2-yl)acetamide (encoded 1c), were synthesized *via* the reaction between 2-thienyl-isothiocyanate with 2-propylaniline and 2,4,6-trimethylaniline, respectively. The compounds were characterized by physical (melting point, solubility) and spectral properties. The antioxidant activity was determined *in vitro* based on the scavenger activity towards free radicals (DPPH and ABTS) and ferric reducing power assays. The antioxidant activity was expressed as EC50 (mM) and as trolox equivalents (μg trolox/g compound). The antibacterian effect of the new compounds was tested against Gram-positive (*Staphylococcus aureus*) and Gram-negative bacteria (*Escherichia coli, Pseudomonas aeruginosa*); furthermore the antifungic effect was tested against *Candida albicans* strains, in order to establish the minimal inhibitory concentration (MIC – mg/mL).

Results: Compound 1c showed the strongest antioxidant activity by means of ABTS scavenger activity (EC50 = 1.94 mM, trolox equivalents = 205.67 μg trolox /g compound) and ferric reducing power (EC50 = 0.15 mM and trolox equivalents – 2096 μg trolox /g compound). Regarding the antibacterian activity, both compounds have shown strong inhibitory

activity towards *Staphylococcus aureus* (CMI = 0.96 mg/ml). However compound 2c showed a superior antibacterian/antifungic effect against *Escherichia coli* and *Candida albicans* (CMI = 0.87 mg/mL and 0.10 mg/mL respectively) compared to compound 1c (CMI = 1.56 mg/mL and 12.5 mg/mL respectively). **Conclusions:** Both compounds exhibited promising antioxidant, antibacterian and antifungal activities. Further studies (both *in vitro* and preclinical) are needed in order to determine the exact mechanism of action and the potential valorification of these compounds in infectious diseases or metabolic syndrome associated with oxidative stres.

In Silico Studies of Some New Tricyclic Compounds, Structurally Related to Dosulepin

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Objectives: Dosulepin is a tricyclic antidepressant which inhibits the reuptake of biogenic amines, increasing available neurotransmitter levels at the synaptic cleft. Modulation of monoamine neurotransmission is arguably the most important strategy for pharmacological therapy of major psychiatric disorders. The object of the present study was the prediction of biological activity spectra and evaluation of drug likeness profile of some new tricyclic compounds, structurally related to dosulepin.

Methods: The new tricyclic compounds were synthesized following a multistep synthesis starting from phtalide and different substituted thiophenols. The PASS (Prediction of Activity Spectra for Substances) online was used to estimate the probable profile of biological activity spectra, while SwissADME online tool was utilized to predict druglikeness characteristics.

Results: PASS online indicated for all compounds a good probability to be active as antidepressant agents, the mechanism of action being as monoamine reuptake inhibitors. The most active predicted compound (Pa = 0.744) was Molecule 1 (6*H*-benzo[c][1]benzothiepin-11-ylideneamino] 4-(diethylaminomethyl)benzoate), which contain the tricyclic dibenzothiepine scaffold and a dialkylaminoalkyl side chain, like dosulepin. SwissADME predicted for all compounds favorable pharmacokinetic properties, including a bioavailability score of 0.55. The new tricyclic derivatives meet the drug-likeness rules like: Lipinski, Ghose, Veber, Egan and Muegge.

Conclusions: *The in silico analysis identified the new tricyclic derivatives that are promising leads to the development of new antidepressant agents.* These current predictions will be further verified by *in vivo* tests.

Formulation and Evaluation of Anti-Dark Circle Cosmetic Products Based on Natural Active Ingredients

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Dark circles, characterized by a darker coloration of the periorbital area, are a common unsightly phenomenon that affects a large part of the population. They can be caused by a variety of factors, such as fatigue, aging, genetic predisposition, but also skin or blood vessel diseases. For this reason, the search for effective and safe solutions to reduce them is a constant concern in the dermato-cosmetic industry.

Interest in natural ingredients has increased significantly lately, due to consumer demands for products that are gentler on the skin and less likely to cause adverse reactions. Ingredients such as plant extracts, fatty and essential oils, peptides, vitamins and minerals can influence the multiple causes of dark circles, through antioxidant, anti-inflammatory, vasoconstrictor and skin regeneration stimulating effects.

The paper presents the stages of selection of active ingredients, formulation of several types of anti-aging products, methods of obtaining them, as well as stability and safety tests to meet quality and efficiency requirements. The organoleptic characteristics, a series of physico-chemical and rheological parameters specific to these forms were determined. The determinations were made in accordance with the provisions of the pharmacopoeias in force and the indications in the specialized literature, aiming at: appearance, homogeneity, pH, spreading capacity, viscosity, skin hydration, melanin content and skin erythema.

The paper aims to contribute to the development of innovative anti-aging products, which not only meet the aesthetic needs of consumers, but also promote a healthy lifestyle, through the use of natural and effective ingredients.

Development and Evaluation of Some Biopolymeric Systems Designed for Vaginal Administration of an Anti-Inflammatory Drug

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Objectives: Inflammation often accompanies various diseases with cervicovaginal localization and can contribute to the occurrence of important complications. The aim of this study was to develop and evaluate a series of biopolymeric systems based on collagen, hydroxypropyl methylcellulose (HPMC) and gellan gum (GG), usable in the vaginal administration of a nonsteroidal anti-inflammatory drug. The selected drug model was diclofenac sodium, a potent COX2 inhibitor and important candidate for drug repurposing in the oncology field.

Methods: 2% HPMC and 1.2% GG hydrogels were added in different ratios to the 1% collagen gel, obtaining two types of mixed hydrogels. Subsequently, diclofenac sodium was added to each formulation in two concentrations, the 4 resulting mixed hydrogels being crosslinked with glutaraldehyde, and then lyophilized. Hydrogels were evaluated by stationnary rheological analysis, and the corresponding freeze-dried hydrogels were characterized by SEM analysis, swelling capacity, enzymatic degradation, goniometric analysis and *in vitro* drug release kinetics.

Results: All hydrogels exhibited a pseudoplastic character, while the addition of gellan gum led to an increase in viscosity. SEM images showed distinct microstructural elements of the polymers and highlighted the presence of the drug both on the surface and integrated into the polymeric network. The goniometric analysis showed the hydrophilic character of the developed systems, also confirmed by an adequate swelling capacity, which showed a decrease with increasing drug concentration. The release mechanism of diclofenac from the biopolymeric systems revealed an initial burst-release effect, followed by a prolonged release of the drug over 24 hours. This dual mechanism favors ensuring a rapid control of inflammation, subsequently sustained by the gradual release of the drug.

Conclusions: Based on the obtained results, the biopolymeric systems based on collagen, HPMC, gellan gum and a nonsteroidal anti-inflammatory drug show potential for further use in controlling inflammation associated with various cervicovaginal conditions.

Reusing Wine Industry Waste: Eco-Friendly Solutions for the Chemical and Pharmaceutical Sectors

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Purpose: The wine-making industry is a broad sector that encompasses the production of both primary products, such as must and wine, as well as by-products, including grape marc, wine yeast, and others, which possess potential for reuse in chemical and pharmaceutical applications. This paper predominantly examines the methods and processes involved in the extraction of these secondary by-products of vinification, with a particular focus on their practical and economic utilization.

Method: This study involves the analysis and interpretation of existing literature to identify the potential for reusing components of wine-making by-products, as well as to examine the processing methods that maximize efficiency.

Results: The grape marc produced during winemaking can be utilized to extract tartaric acid, higher alcohols, aldehydes, food colorants, while the dried seeds can be processed into grape seed oil, which has applications in both the food and dermo-cosmetic industries. Additionally, grape waste is a valuable source of polyphenols, vitamins, lipids, and fiber, offering direct applications in pharmaceuticals and dermo-cosmetics. Yeast generated from dry wines is a source of tartaric acid, alcohol, and amino acids (such as tyrosine, asparagine, glutamic acid, and others). Bioethanol produced from these by-products can serve as a sustainable energy source. The marc, yeast, and wastewater from winemaking are also raw materials for producing lactic acid, biofuels (including ethanol), enzymes, chemical intermediates, and energy through processes like anaerobic digestion and pyrolysis.

Conclusion: The secondary products of winemaking are an important economic resource, with valuable applications in the chemical and pharmaceutical industries, making them a focus of significant research interest. Utilizing winemaking by-products ensures the full exploitation of Vitis-vinifera resources, leading to reduced pollution and waste.

Novel Pd(II) Complexes with Schiff Bases Derived from 2-Chloro-5-(Trifluoromethyl) aniline: Synthesis, Structural Characterization and Acute Toxicity Assessment

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Objectives: Palladium complexes with Schiff base ligands have attracted considerable research interest due to their antiviral, antifungal, antimicrobial, and antitumor activities. Incorporating fluorine-containing substituents into the Schiff base structure further enhances biological activity, selectivity, and stability of the complexes. In this context, our study reports the synthesis, characterization, and acute toxicity assessment of Pd(II) complexes derived from Schiff bases containing 2-chloro-5-(trifluoromethyl)aniline.

Methods: The Schiff base ligands were prepared through a condensation reaction between various aromatic aldehydes and 2-chloro-5-(trifluoromethyl)aniline, using either equimolar proportions or a twofold excess of the amine. Treatment of the ligands with palladium acetate led to the formation of the corresponding complexes. A detailed characterization of the compounds was carried out using elemental analysis, IR, ^{1}H and ^{13}C NMR, UV-Vis spectroscopy, magnetic susceptibility measurements, and molar conductivity tests. Furthermore, molecular structures of the compounds were obtained via single-crystal X-ray diffraction analysis. Both, Schiff bases and their corresponding palladium complexes were evaluated for acute toxicity on two distinct and representative species: the monocot *Triticum aestivum* L. and the crustacean *Artemia franciscana* Kellogg.

Results: The molecular structures of the newly formed ligands and Pd(II) complexes were established through physicochemical analysis. In all the complexes, the Schiff bases coordinate to the palladium ion as mononegative bidentate ligands through the O-N chelating system. The toxicity assessment revealed that monocot root growth and crustecean lethality showed concentration-dependent variations.

Conclusions: By exploring new Pd(II) complexes with Schiff bases, this study significantly expands the variety of available compounds, contributing to future advances in coordination chemistry. Additionally, the results from acute toxicity investigations position these new complexes as strong candidates for future evaluations of biological activity.

Development and Evaluation of Experimental Cosmetic Products Containing Biocompatible Emollients for Atopic Dermatitis

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Objectives: This preliminary study aims to formulate and comparatively evaluate two water-in-oil (W/O) creams, developed with different concentrations of the oil phase (F1: 40.5%, F2: 52.5%), intended for the care of skin affected by atopic dermatitis. The goal was to assess the performance of the selected emulsifiers in terms of emulsion stabilization and the effects of the formulations on symptoms associated with atopic dermatitis.

Materials and methods: The formulations were developed using biocompatible emollients (jojoba oil, vegetable squalane, caprylic/capric triglycerides C8-C10, shea butter) and emulsifiers having a favorable dermatological profile – ingredients known to contribute to the restoration of the skin's lipid barrier and to improve biophysical properties such as hydration and elasticity, thereby reducing pruritus. Physicochemical characterization included pH measurement, viscosity analysis and spread ability testing, while other determinations focused on stratum corneum hydration, transepidermal water loss (TEWL) and potential post-application erythema.

Results: All formulations exhibited appropriate organoleptic and physicochemical properties, a pH close to the physiological range, and a low risk of irritation. F2, containing a higher lipid phase, demonstrated greater viscosity and a superior occlusive effect, with increased hydration potential, but lower spread ability compared to F1. F1 may be perceived as more pleasant upon application due to its lighter texture and smoother sensory profile.

Conclusions: The results suggest moisturizing and barrier-repair effects of both experimental cosmetic products. To better assess and confirm these effects, the formulations are currently being preserved at room temperature and applied over a 2-week period, with all tests to be repeated at the end of this interval. The results of the study are expected to contribute to the development of an optimized formulation strategy for dermato-cosmetic products intended for sensitive or atopic skin.

Formulation and Comparative Evaluation of Two Antioxidant Cosmetic Serums with Anti-Aging Potential

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Objectives: This preliminary study aimed to formulate and compare two experimental anti-aging serums containing ferulic acid, vitamin C, and vitamin E at different concentrations, in order to assess how active ingredient ratios influence product efficacy and optimize the serum formulation.

Method: Two water-based serums were prepared with varying concentrations of ferulic acid, vitamin C, and vitamin E, using xanthan gum as a thickener. Organoleptic properties, pH, and viscosity were evaluated to determine user acceptability and application characteristics. Thixotropic behavior was assessed by measuring viscosity changes under varying shear rates. Both formulations were also tested for their effects on skin parameters, including hydration, erythema, and the alignment of elastin and collagen fibers. These evaluations were conducted using the Cutometer® dual MPA 580 and Visioscan® VC 20plus systems. Comparative imaging analyses were performed before and after a period of product application to estimate anti-aging effects.

Results: Both serums exhibited a clear, homogeneous appearance and a light texture. The formulation containing higher concentrations of active ingredients showed slightly increased viscosity, attributed to the active content rather than the xanthan gum level. Both formulations demonstrated desirable thixotropic properties. No significant differences in hydration were observed between the two serums after repeated applications. Both showed a mild hydrating effect and low erythematous potential, suggesting good tolerability and a possible tonic benefit. Imaging analysis indicated anti-aging effects for both formulations, with a more pronounced effect observed for the formulation with higher concentrations of actives.

Conclusions: Both antioxidant serums were well tolerated and produced mild hydrating and tonic effects. The formulation with higher concentrations of active ingredients demonstrated a slightly more noticeable anti-aging effect in imaging assessments. These findings support the potential for optimizing antioxidant serum formulations by adjusting active ingredient ratios to enhance efficacy while maintaining favorable application properties and skin tolerability.

Exploring Non-Clinical Endpoints for the Behavioral Analysis of Heterocypris Incongruens (Ramdohr) Exposed to Caffeine and Ethanol

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Objectives: Heterocypris incongruens (Ramdohr) is a cosmopolitan species of small non-marine crustaceans, largely studied as an ecological bioindicator and more recently reported as an alternative experimental model for cognition. The aim of our study was to explore an array of nonclinical endpoints, using sublethal concentrations of two widely distributed CNS-acting drugs, caffeine and ethanol.

Methods: Laboratory-cultured H. incongruens were exposed to different concentrations of either substance (from 1 µg/mL to 100 mg/mL). Lethality was recorded at 24 and 48 hours, post-treatment. Videos of experimental groups in separate 15 mm culture dishes were acquired with a digital camera. Movement was analyzed through a set of proposed nonclinical endpoints (including total distance, angular speed, tortuosity), compared against an untreated control group. Output and calculations were managed with image-processing software (Fiji) and in-house scripts (Python, VBA).

Results: LC50 values were calculated in a previous study. Lower concentrations exhibited negligible toxic effects and final tested dilution thresholds varied from 200 µg/mL for caffeine and 8 µg/mL for ethanol, respectively. Correct parameters for robust data output and calculations were characterized based on video acquisition technique and media file. For the tested ranges of sublethal concentrations, both caffeine and ethanol significantly altered the movement behavior of H. incongruens, as supported by the selected endpoints.

Conclusions: Distinct endpoint changes are influenced by substance concentration. Our findings highlight the consequences of anthropogenic involvement, while broadening H. incongruens' potential as an alternative model for evaluating toxic and stimulatory/depressant effects.

Evaluation of Antioxidant Activity in Three Ferns Species

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Introduction: Pteridophytes represent an evolutionary link between lower and higher plants. The potential therapeutic uses of *Polypodium vulgare* have gained increased attention in recent years, following the publication of a monograph on its rhizome by the European Medicines Agency. Fern leaves are recognized as a rich source of antioxidants. Studies have shown that *Polypodium vulgare* contains significant amounts of shikimic acid, along with caffeoylquinic acid derivatives and flavonoids (epicatechin and catechin). The leaves of *ferns* are also a source of polyphenolic compounds.

Objectives: The aim of this study was to evaluate antioxidant activity by determining the polyphenol content in the extracts obtained from the species *Polypodium vulgare*, *Dryopteris carthusiana and Gymnocarpium dryopteris*. Specialized studies indicate that these pteridophyte species are rich in flavonoids, polyphenols, and fatty acids.

Methods: The antioxidant activity was determined using the DPPH method, employing three lyophilized extracts from the leaves of the three species. The extracts were dissolved to obtain solutions with a concentration of 1 mg/mL and of these appropriate dilutions were used. Antioxidant activity was evaluated spectrophotometrically at a wavelength of 530 nm in comparison with a reference standard, quercetin.

Results: The three extracts showed varying levels of free radical scavenging capacity, all of which were lower than that of the standard, quercetin. However, the results suggest that, due to their content of flavonoids and phenolic acids, the extracts exhibit significant antioxidant activity.

Conclusions: The extracts will be further investigated to evaluate their potential for use, owing to their antioxidant content.

The Ethnopharmacology and Pharmaceutical Potential of *Silphium* Species: Bridging Traditional Medicine and Modern Bioproducts

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Silphium is a genus of flowering plants in the family *Asteraceae*, tribe *Heliantheae*, comprising 23 species of perennial plants, all of them native to North America.

Objectives: The main objective is to evaluate the pharmaceutical relevance of *Silphium* species, particularly *S. perfoliatum*, *S. integrifolium*, and *S. radula*, by integrating their traditional medicinal uses with contemporary phytochemical and pharmacological research.

Method: This review synthesizes ethnobotanical records, pharmacognosy research, and clinical phytochemistry from various bibliographic references, as Science Direct, MDPI and PubMed. Sources include classical texts, indigenous medicinal records, and peer-reviewed studies focusing on plant material extracts, in vitro bioactivity, and emerging therapeutic applications.

Results: Historically, various species of the genus *Silphium* were used by Native American tribes to treat inflammation, infections, respiratory disorders, gastrointestinal issues, and reproductive health problems. *S. perfoliatum* was prepared as teas, poultices, or decoctions to relieve pain and act as an antiseptic and expectorant.

Phytochemical investigations have identified several bioactive compounds in *Silphium* species, including oleanene- and ursene-type triterpene saponins, essential oils, flavonoids, phenolic acids, and terpenoids. A saponin isolated from *S. radula* demonstrated significant antiproliferative activity against breast cancer cell lines (MDA-MB-231), indicating its potential in oncological pharmacotherapy. Additionally, the squalene-rich oil extracted from *S. integrifolium* seeds offers a plant-based alternative to squalene derived from sharks. This oil has applications in vaccine adjuvants, dermatology, and lipid-lowering agents. Some *Silphium* species have also exhibited antibacterial and antifungal properties, suggesting potential topical and systemic applications in the management of infectious diseases.

Conclusion: In conclusion, *Silphium* species are phytochemically and pharmacologically rich plants whose traditional uses are increasingly being validated by modern science. Their therapeutic potential spans inflammation, cancer, skin health and other health related subjects and opens the path for further studies in these topics.

Innovative Approaches in the Development of Topical Antipsoriatic Formulations

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Objectives: Psoriasis is a chronic, genetic inflammatory disease that manifests itself on the skin, but which often has systemic causes and manifestations. Psoriasis, within the framework of skin diseases, presents many challenges, for specialists being a disease characterized by a high prevalence, chronicity, disfigurement and associated comorbidity.

The paper presents the development of preparations that ensure treatment according to different needs and types of psoriatic conditions (from extensive areas to localized lesions) and the active ingredients used, natural and synthetic, aim both to reduce inflammation and normalize keratinocyte proliferation, characteristic of psoriasis. Traditional active ingredients such as salicylic acid were combined with natural and innovative compounds such as cannabidiol, plant extracts with soothing properties, aloe and green tea, hyaluronic acid, panthenol, to create a synergistic effect. An additive that can modulate the skin microbiome, a prebiotic, inulin, was also incorporated, contributing to the restoration of skin balance.

Method: Three types of preparations were proposed: lotion, L/H cream and carbopol 940-based gel. 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 gel and cream exhibited exceptional spreadability, optimal flow, and remarkable skin-hydrating properties, while significantly reducing inflammation, irritation, redness of the skin and ensures the removal of scales. Importantly, these products and lotion did not compromise the skin's natural pH level.

Conclusions: The obtained formulations offer a promising foundation for further research and development of topical treatments for mild-to-moderate psoriasis.

The Relevance of Phytotherapy in the Management of Lower Urinary Tract Infections

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Introduction: Currently, urinary tract infections (UTIs) have a significant incidence, especially in women; 50-60% of women experience a UTI at least once in their lives.

Objectives: This study aims to evaluate the level of use and knowledge of herbal drugs in the treatment of UTIs, in a population group.

Method: A questionnaire was created and distributed online. The results were correlated with phytochemical and pharmacological databases.

Results: 65 responses were received, both from healthy people, and from patients with Lower UTIs (cystitis), aged over 18. Pruni cerasi stipites (in Romanian: „codițe de cireș"), Vitis idaeae folium („frunză de merișor") and Maydis stigmata („mătase de porumb") were the most well-known herbals. Most frequently, doctors and pharmacists recommended phytopreparations containing Vitis idaeae folium („frunză de merișor"), Vaccini macrocarpi fructus („fruct de merișor american"), Uvae ursi folium („frunză de strugurii ursului") and Pruni cerasi stipites („codițe de cireș". Shoots of Vaccinium myrtillus („mlădițe de afin"), Vaccinium vitis idaea („mlădițe de merișor") and Caluna vulgaris ("mlădițe de iarbă neagră") were the most well-known and requested gemotherapeutic remedies. Phytochemical and pharmacological databases support the therapeutic efficacy of all these herbals. Also, respondents are aware of the importance of diet in UTIs prevention and treatment.

Conclusion: Phytotherapy can be a viable solution for the treatment of lower UTIs.

Artificial Intelligence in Dental Education Assessment for Undergraduate Faculty of Dentistry Students of „Carol Davila" University of Medicine and Pharmacy

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Aim: The objective of this study is to examine the performance of advanced AI language models within dental education, focusing on their ability to tackle discipline-specific assessments. By comparing the outcomes of ChatGPT, Gemini Advanced, and DeepSeek to those of undergraduate dental students in a standardized final examination in Dental Prosthesis Technology, the poster seeks to determine the extent to which these models can replicate or outperform human academic achievement.

Materials and methods: A cohort of second-year dental students participated in a standardized multiple-choice assessment. The same items were administered to various AI models. Statistical techniques, including ANOVA, Cronbach's Alpha, and Tukey's HSD, were employed to explore patterns of performance and examine group-level variations.

Results: DeepSeek demonstrated flawless performance on high-complexity items, indicating strong capability in handling cognitively demanding tasks. ChatGPT, meanwhile, exhibited a pattern of adaptive learning, with marked improvement across successive attempts — suggestive of dynamic response optimization. Both models significantly outperformed the human cohort, highlighting a performance gap in favor of AI.

Conclusions: The ability of AI models to match or surpass student outcomes in specialized assessments raises important questions regarding the reliability of unsupervised digital testing. To uphold academic integrity, high-stakes evaluations should be administered exclusively in controlled, proctored settings or through secure platforms with verified access, thereby minimizing the risk of AI-mediated assistance and preserving the validity of assessment outcomes.

Biocompatibility Studies on the Materials Used in Provisional Prosthetic Restorations

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Objectives: The main purpose of this study was to compare through biocompatibility studies materials used in dentistry obtained by different techniques and to elucidate the mechanisms of adaptability and cell survival.

Method: Composite discs were obtained by: 3D printing, milling (classical method) and self-polymerization.
The proliferation of human gingival fibroblasts was measured after 24h and 48h by performing the MTT test and the integrity of the cell membrane was verified by the release of lactate dehydrogenase. The level of oxidative stress was also evaluated by quantifying the level of nitric oxide, and the expression of the protein involved in autophagy, LC3, was evaluated by live fluorescent staining tests.

Results: After incubation for 24 hours, a decrease in cell viability compared to the control was observed by 28.5% for the 3D printed material, 24.2% for the self-polymerized material and by 20% for the material obtained by milling. LDH levels increased by 21.22% in the 3D printed material and by 23.61% in the self-polymerizing sample, in the milled material no increase was recorded. The NO level increased by 3.16% in the 3D printed material, 6.71% in the milled sample and 13.43% in the self-polymerized one. The results also correlate with the fluorescence microscopy images by which LC3 autophagy was evaluated.

The decrease in cell viability was much more pronounced after 48h incubation, especially in the 3D printed sample, 82.7% and in the self-polymerizable sample 42.42%. The results are also supported by the increase in the LDH level by 26% for the 3D printed sample and by 44.13% for the self-polymerizing sample.

Conclusions: Therefore, our results outline that the materials obtained by milling have the best biocompatibility, while the other two materials are suitable for use over a shorter period of time.

3D Printing in Dentistry: Customized Anatomical Models

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Objectives: The integration of advanced 3D printing technology with dental anatomical expertise enables the development of highly detailed, patient-specific educational models. These tools address the limitations of conventional teaching aids by replicating both healthy structures and various odontogenic pathologies, allowing students to gain hands-on experience in a realistic and controlled learning environment.

Methods: Digital conversion of the viscerocranium and dentition was accomplished through intraoral scanning, facial scanning, and computed tomography. These datasets were processed using specialized 3D modeling software to construct anatomically precise maxillary and mandibular arches, including pulp chambers and root canals. The models were printed with MSLA technology using multicolored photopolymer resins, while more elastic, low-hardness resins were used for soft-tissue simulation in pulp spaces, enhancing tactile realism during manipulation.

Results: The printed models exhibited high anatomical fidelity and successfully illustrated a variety of clinical scenarios. Their visual clarity, material differentiation, and realistic textures made them valuable tools in teaching dental anatomy and pathology. Students reported increased confidence and comprehension, while educators noted improved integration of theory and practice through repeated, guided simulation.

Conclusions: 3D printing represents a transformative leap in dental education, offering unmatched versatility and pedagogical value. These customized models bridge the gap between theoretical knowledge and clinical application, fostering the development of diagnostic and manual skills in a low-risk environment. Unlike traditional models, they can be tailored to specific pathologies, reused for multiple learning sessions, and continuously adapted as teaching objectives evolve. As this technology becomes more accessible and cost-effective, its integration into dental curricula is expected to grow substantially. It holds great potential not only to improve educational outcomes but also to standardize clinical skill acquisition, making it an essential component of future dental training.

Treatment Modalities in Tooth Wear in the Digital Era

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Objectives: Tooth wear has become an important medical condition due to its multifactorial nature and increased prevalence not only in the older population, but also in young patients. Being associated with numerous possible biological, mechanical and aesthetic complications, it affects patients' self-confidence and quality of life. The aim of this presentation is to highlight how the latest achievements in investigation, treatment planning, material science and restorations offer many treatment modalities in this global medical issue.

Method: A series of clinical cases selected from the patients of the Department of Prosthodontics is presented. The workflow consists of data acquisition in the clinical examination phase, digital planning and previsualization phase and manufacturing of the long-term provisional restorations and the final ones. During the active phases of the treatment and the follow-up, various digital instruments are used, such as photo and videographic documentation, a jaw tracking system, computer-aided design and manufacturing (CAD/CAM) technology.

Results: Although being a challenging pathology, tooth wear can be predictable and successfully restored with the help of the patients motivation, clinical skills and the latest developments in dentistry, especially regarding communication with the patients, medical team and dental laboratory, intelligent materials, precise manufacturing.

Conclusion: The digital technology enables the practitioners to treat tooth wear and to prevent its complications by means of conventional restorations, but also through a minimal invasive approach.

AI Detection of Teeth and Edentulism in Panoramic Radiographs

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Introduction: The integration of artificial intelligence (AI) into dental imaging has gained momentum in recent years, especially in diagnostic support. One critical area is the analysis of orthopantomograms (OPGs), panoramic radiographs widely used in dental practice. This study focuses on applying machine learning techniques to detect teeth and classify edentulous areas in OPGs, aiming to improve diagnostic accuracy and support clinical decision-making.

Methods: A dataset consisting of 1000 anonymized OPG images, open source, was curated and preprocessed to ensure consistency and quality. A deep learning object detection model based on the YOLO (You Only Look Once) architecture was employed to detect individual teeth and segment the dental arch. Image annotation was performed manually to create training and validation sets. Post-detection, a rule-based classifier was developed to identify edentulous zones based on voids and spatial patterns.

Results: The tooth detection model achieved a mean average precision (mAP) of 89.4% on the test set, with robust identification of molars, premolars, canines, and incisors. The edentulism classifier demonstrated 91.2% accuracy in differentiating partial from complete edentulous cases. Preliminary tests suggest strong generalization across diverse image sources and patient demographics.

Conclusion: This research demonstrates that AI-based analysis of OPG images can reliably identify dental structures and classify edentulism with high accuracy. These findings support the integration of machine learning tools into dental diagnostics, with potential applications in screening, treatment planning, and epidemiological studies. Further development and validation on larger datasets are required to transition toward clinical adoption.

Analog and Digital Synergy in Dental Impressions in Selected Clinical Cases

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Some digital workflow producers think conventional impressions have a limited life span that will run out as technology improves, but dental professionals know that one way to do things does not work for any situation. The ratio of scanning to traditional impressions is going to continue to move toward the digital side, but for sure there will be a share for silicone-based impression materials.

In our study, we present a mixed analog-digital protocol for the optimized capture of the deep margin line of the prosthetic preparation and the adjacent teeth proximal surfaces in localized gingival retraction clinical cases.

Material and methods: The study included 10 patients with: 1) the presence of a single lateral compromised tooth which requires prosthetic rehabilitation by means of a zirconia crown or the presence of a previous tooth-supported damaged crown, to be replaced 2) all adjacent teeth (mesial and distal) without any prosthetic restoration; 3) age between 18 and 80 years; 4) good general health and oral hygiene. The protocol was: 1) an intraoral impression was captured with Medit i700 scanner, without dwelling on details regarding the visibility of the proximal preparation margins and surfaces of the adjacent teeth; (2) a one-time partial analog impression was taken by means of a partial universal dental tray filled with light and heavy putty silicone, after the removal of a retraction cord; (3) the conventional impression was scanned extraorally with the same scanner; 4) the missing part of the first digital impression is replaced by the inverted second digital impression. This allows the clinician and dental technician to better visualize the prosthetic preparation margins and the adjacent teeth, which represent key points for the marginal fit and interproximal contacts of the zirconia crown and therefore in the success of the prosthetic treatment.

Results: Taking multiple scans and combining them ensure that all important areas are captured. Sometimes deep apically positioned margins and proximal adjacent teeth surfaces can be difficult to visualize and capture with digital scanners due to tissue interference and limited light access. Taking multiple scans and combining them can help ensure all important areas are captured. Further these impressions had to be superimposed and fused together, in order to get clearly visible of the prosthetic preparations.

Conclusion: Optical impression in conventional prosthetics plays a very important role as it is the first step in the complete digital line of prosthetic construction.

The present analog-digital protocol for capturing the margins of prepared single abutments was compatible with the fabrication of clinically precise restorations in selected clinical cases.

Clinical Study on Xerostomia as a Main Complaint

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Objective: To assess of the clinical detectable alterations of the oral mucosa in patients presented with the sensation of dry mouth (xerostomia).

Method: A retrospective clinical research was conducted to evaluate patients whose primary complaint was dry mouth. We selected the medical charts of patients with main symptoms of dry mouth from the Department of Oral Pathology, Faculty of Dentistry, „Carol Davila" University of Medicine and Pharmacy.

Results: 87 patients reporting the presence of a chronic sensation of dry mouth were included in this study. Women make up the majority (86.2%). The average age was 59.54 years. Ages above 70 were the most impacted (20 cases), followed by those between 61 and 70 years (16 patients). Most of the patients were non-smokers. Regarding associated systemic conditions, 47.1% of the patients had hypertension, 16.1% had mental health disorders, 14.9% had thyroid diseases, and 3.4% had diabetes. 40% of the patients-45.97% of the sample received long-term treatment with at least two drug classes that have the side effect reduced salivary flow. At the onset, 63.2% of patients reported only the sensation of dry mouth, while 12.6% reported both dry mouth and a stinging sensation. Conventional clinical examination of the oral mucosa revealed that 57.9% of the patients presented clinical signs of dry mouth (e.g.dental mirror adherent to oral mucosa, no saliva on the anterior floor of the mouth), depapillated tongue (atrophy of the dorsal tongue mucosa) in 13.2% of the patients, and 11.8% had an erythematous appearance of the oral mucosa. No clinical signs suggestive of xerostomia were observed in 19 patients.

Conclusions: The subjective sensation of dry mouth is not always accompanied by clinically observable changes. The etiology of xerostomia is frequently multifactorial and occurs more frequently in women.

The Utility of Uterine Artery Embolization in the Treatment of Advanced Cervical Cancer Bleeding

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Objective: Cervical cancer is the third most common cancer judging by the incidence rates in Romania targeting an important disease burden as a vast amount of patients come in advanced stages. The goal of the study is to assess the utility of uterine artery embolization, a minimally invasive interventional radiology technique, in bleeding associated with advanced cervical cancer.

Method: Data from the Emergency University Hospital Obstetrics and Gynaecology registry encompassing a 6.5 year period was obtained summarising the patients formerly and de novo diagnosed with advanced cervical cancer which were also admitted for bleeding. The information underwent additional triage judging by the types and association of haemostatic therapy administred – intravenous, local, embolization.

Results: Our retrospective study contained 450 cases of advanced cervical carcinoma. Out of these 300 were admitted for vaginal bleeding and 35% were nonresponsive in regard to standard haemostatic local and intravenous therapy, thus needing a uterine artery embolization. Repeat embolization was necessary for 7 patients. All patients obtained cessation of bleeding after embolization and no secondary immediate or late side-effects were noted.

Conclusions: Uterine artery embolization is a safe and effective procedure in regard to cervical cancer nonresponsive intractable bleeding leading to a better quality of life. When in need the procedure is repeatable in case of de novo cancer vascularization. In conclusion, uterine artery embolization can be considered the only emergency rescue procedure for advanced stage inoperable cervical cancer patients.

Clinical Correlation of Antepartum Diagnosis of Fetal Distress with the APGAR Score at Birth

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Objective: This study aims to evaluate the correlation between the antenatal diagnosis of fetal distress and the Apgar score at birth. The goal is to determine if the antenatal methods used for diagnosing fetal distress correlate with the Apgar score at birth.

Method: A retrospective observational study was conducted on a cohort of 137 neonates selected based on fetal distress diagnoses from high-risk pregnancies. The research involved assessing Apgar scores in relation to birth weight, diagnosis, sex, and origin through statistical correlation assessment.

Results: The study found that Apgar scores below 9 demonstrated a moderate relationship with previously detected fetal distress indicators. The data showed that 62% of newborns received Apgar scores of 9 and above despite showing signs of fetal distress before birth. The Apgar scores of 38% of newborns fell at 8 or lower which indicated different levels of perinatal compromise.

Conclusion: The current diagnostic methods have their limitations but clinicians remain cautious to prevent missing any cases of fetal distress. Obstetricians practice defensive medicine because they must protect the fetus from its extreme vulnerability and the fast progression of intrauterine compromise even when they lack certainty.

Obstetric Management in Autoimmune Thrombocytopenia During Pregnancy: a Case Series of 10 Patients

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Introduction: Autoimmune thrombocytopenia in pregnancy poses significant maternal and fetal risks, requiring close hematologic surveillance and multidisciplinary decision-making. The mode and timing of delivery are critical, especially in cases with severe thrombocytopenia or obstetric complications.

Methods: We retrospectively reviewed 10 cases of pregnant patients diagnosed with immune thrombocytopenia (ITP) who delivered between January 2023 and March 2025 in a tertiary maternity center. Platelet counts ranged from 8,000 to 116,000/μL. Management included corticosteroid therapy, intravenous immunoglobulin (IVIg), and/or transfusion of blood products based on clinical severity. The delivery mode was chosen individually, according to obstetric and hematologic status.

Results: Among the 10 patients, 2 delivered vaginally, while 8 underwent cesarean section. Of the cesarean deliveries, 7 were performed under general anesthesia with orotracheal intubation (GA-IOT) and 1 under spinal anesthesia. Indications for cesarean section included previous uterine scar, intrauterine growth restriction, non-reassuring fetal status, failed trial of labor, or severe maternal comorbidities. Blood products were administered in 7 patients (platelets ± red cell concentrates), and IVIg in 3 patients. Postoperative outcomes were favorable in 9 cases. One maternal death occurred in a patient with decompensated congenital heart disease and irreversible hypoxemia, highlighting the added complexity of cardiopulmonary comorbidities. The most severe case, with a baseline platelet count of 8,000/μL, required multidisciplinary care, multiple transfusions, IVIg over three days, corticosteroids, and intensive care unit admission. Platelet recovery and clinical stabilization were achieved within 14 days.

Conclusions: Pregnancy complicated by ITP requires personalized care, careful timing of delivery, and collaboration between obstetricians, hematologists, and anesthesiologists. Invasive procedures should be guided by dynamic hematologic monitoring, balancing the risks of hemorrhage and thrombosis. Individualized anesthetic planning is essential, especially in cases of profound thrombocytopenia.

Management of Pregnant Women with Hereditary and Acquired Thrombophilia

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Background: Thrombophilia is a condition characterized by an increased tendency to form blood clots inappropriately due to coagulation abnormalities. During pregnancy, this predisposition can significantly impact both maternal and fetal outcomes. Understanding the relationship between thrombophilic risk factors and clinical events is essential for developing effective diagnostic and therapeutic strategies.

Methods: We conducted a retrospective analytical study of 1025 pregnant patients admitted to the Obstetrics and Gynecology Clinic of the University Emergency Hospital Bucharest, Romania, over a seven-year period (2017–2023). We evaluated the presence of thrombophilic mutations, coagulation factor deficiencies and associated risk factors. Our objective was to identify the prevalence of these conditions, their clinical correlations, and the optimal diagnostic and therapeutic approach for individualized care.

Results: The incidence of thrombophilic mutations in the study population was higher than reported in the existing literature. Specifically, protein S deficiency was observed in 37% of patients during the first trimester, 4.4% in the second trimester and 4.5% in the third trimester. Protein C deficiency was recorded in 4.15% of cases.

Hypertensive disorders of pregnancy showed a strong correlation with coagulation abnormalities – particularly protein S deficiency and the presence of lupus anticoagulant.

Conclusion: Our findings suggest that thrombophilic conditions are more prevalent among pregnant women than previously reported. The strong association with hypertensive pathology and advanced maternal age underscores the need for targeted screening and early diagnosis. An individualized therapeutic approach, based on specific thrombophilic profiles is essential to optimize maternal and fetal outcomes.

The Impact of Anti-HPV Vaccination on the Incidence and Evolution of Oropharyngial Carcinomas

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Introduction: Human papillomavirus infection is a viral infection that causes lesions of the skin or mucous membranes in different parts of the human body. Depending on the type and family of the viral strain with which one comes into contact, the effects of the infection are very different. There are more than 100 forms of the HPV virus identified to date, of which 2 (HPV 18 and HPV 16) are responsible for 70% of the types of cervical cancer. The genotypes most frequently involved in the development of oropharyngeal cancers are HPV 16 and HPV 33.

Materials and methods: Currently, there are 3 types of HPV vaccines (Gardasil, Gardasil 9 and Cervarix). All 3 vaccines prevent infection against HPV 16 and 18. Gardasil 9 prevents infection against these 2 types of HPV to which are added strains 6, 11, but also prevention against 5 more carcinogenic HPV types (HPV 31, 33, 45, 52 and 58) and which together are responsible for another 10-20% of cervical cancer cases. Gardasil 9 thus offers the most complete antiviral protection.

Results: The uneven distribution of HPV-related diseases with high incidence is explained by the difficulties related to the implementation of preventive strategies. The effectiveness of the HPV vaccine is proven in countries such as Australia, which implemented a vaccination program with 3 doses of the vaccine, addressed to both girls and boys starting from the age of 11-12 years. The success of the vaccination program is also proven in regions such as Europe where at least 2 of the 3 available vaccines have been introduced and where vaccination programs are followed to completion, thus a decrease in the incidence of HPV-related infections and diseases has been reported.

Discussions: Oropharyngeal squamous cell carcinoma remains a diagnostic and therapeutic challenge. Early detection remains the key to success, and the population needs specific information about the risk of HPV-induced oropharyngeal carcinoma. In Romania, due to the low accessibility of the general population to specialized care, there are very few cases of early detection. Vaccination is the first line of defense against HPV infection and associated diseases.

Conclusions:
· Knowledge and awareness of the risks associated with oropharyngeal HPV infection leads to early intervention of preventive behaviors instead of decreasing the incidence rate.
· Since there are currently no screening tools for oropharyngeal cancer, primary prevention is the most effective strategy.
· Prophylactic HPV vaccination is associated with a significant decrease in the prevalence of oral infection with HPV types that can cause oropharyngeal cancer in young adults.

Exploring Global Mortality in Perforated Peptic Ulcers: the Impact of Healthcare Systems and Lifestyle Factors

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Objective: This study investigates global trends in mortality related to perforated peptic ulcer disease (PPUD) and explores how these patterns correlate with key national indicators. Particular attention is given to factors such as healthcare access, smoking and alcohol consumption, and the availability of surgical services, which may influence outcomes across different income settings.

Methods: A retrospective, cross-country analysis was conducted using publicly available data from the World Health Organization (WHO), the World Bank, and the Institute for Health Metrics and Evaluation (IHME) over the period 2000–2021. PPUD-specific mortality rates were collected and analyzed across diverse regions. Correlation analyses were performed to assess associations between mortality and variables including smoking prevalence, alcohol use per capita, national healthcare expenditure, physician density, and the availability of essential surgical services.

Results: The findings revealed substantial global variation in PPUD mortality. High-income countries experienced a steady decline in mortality rates over time, likely reflecting better access to timely diagnosis and surgical intervention. In contrast, low- and middle-income countries showed persistently high mortality, often linked to under-resourced healthcare systems. Strong correlations were identified between elevated mortality and limited access to surgical care, low physician density, and lower healthcare spending. Moreover, lifestyle factors such as tobacco and alcohol use were found to be associated with higher mortality in vulnerable subgroups.

Conclusion: These results emphasize the impact of healthcare system capacity and modifiable risk factors on PPUD outcomes globally. Improving access to emergency surgical care and increasing investment in healthcare infrastructure are critical steps toward reducing PPUD-related mortality. In addition, targeted public health strategies aimed at reducing smoking and alcohol use may contribute to better outcomes, especially in low-resource environments where preventable deaths remain high.

Mapping the Research Landscape of Low Anterior Resection Syndrome: a Bibliometric Analysis

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Objective: This study aims to provide a comprehensive bibliometric overview of global research trends, influential authors, institutions, and thematic developments in the field of Low Anterior Resection Syndrome (LARS). LARS represents a frequent and debilitating complication following sphincter-preserving surgery for rectal cancer. Despite its significant clinical and quality-of-life implications, the scientific landscape surrounding LARS has not been comprehensively analyzed through bibliometric methods.

Methods: All the records related to LARS were retrieved from the Web of Science Core Collection, covering the period from inception to March 2025. Data were exported in BibTeX format and processed using Bibliometrix and its web interface Biblioshiny. Descriptive statistics, collaboration networks, co-citation analysis, keyword cooccurrence mapping and thematic evolution charts were applied to characterize the scientific output and identify emerging research fronts.

Results: The preliminary results suggest a significant increase in the volume of publications over the past decade, accompanied by a noticeable rise in interdisciplinary contributions. Early keyword analysis indicates a potential thematic shift from functional outcomes and quality of life assessments towards topics such as neurostimulation, and emerging surgical techniques. Initial thematic mapping points to "fecal incontinence" and "quality of life" as central, motor themes, while areas like "biofeedback" and "anorectal physiology" appear to be niche and possibly in decline. Ongoing collaboration network analysis reveals limited cross-continental partnerships so far, highlighting a potential area for enhanced international research synergy. Further in-depth analysis is currently underway to validate and expand these findings.

Conclusions: The field of LARS research is rapidly evolving, with increasing interest in both surgical innovation and long-term patient-centered outcomes. This bibliometric study highlights influential contributors, thematic gaps, and future research directions, offering a structured framework for researchers and clinicians aiming to advance care for patients affected by LARS.

Transarterial Periarticular Embolization – Efficient Alternative Treatment for Patients with Mild to Moderate Knee Osteoarthritis: a Case Report

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Objective: Osteoarthritis (OA) of the knee is a common joint disease characterized by pain and degenerative lesions of the cartilage and peri-joint structures. The risk of knee OA increases with age and is more frequently seen in women over forty. Transarterial periarticular embolization (TAPE) is a relatively new technique that has emerged as a promising method of delaying knee surgery in individuals suffering from OA. This case report aims to demonstrate the safety and the potential of the minimally invasive procedure.

Methods: I present the case of a 63-year-old man accusing knee stiffness and instability debuting 2 years ago with imaging showing a mild to moderate bilateral knee OA (Ahlbäck III). Initially the treatment consisted in pain relief and anti-inflammatory medication combined with physical therapy. Due to the the lack of improvement of the patient's condition he was presented an alternative procedure. TAPE consists of microparticle embolization following supra-selective catheterization of the genicular arteries using various embolic agents. The patient was clinically evaluated at different timeframes according to the Western Ontario and McMaster Universities' arthritis index, knee injury, and osteoarthritis outcome scores, and the 36-item short-form survey (WOMAC, KOOS, and SF-36).

Results: The procedure had considerably positive results and no complications. The next day the patient was discharged and able to regain physical activity. After 1 month follow-up, KOOS and WOMAC improved substantially from 46.6 to 56.5, 49.5 to 59.8, respectively. Physical SF-36 improved from 42.1 to 50.0 points. No significant changes in patient reported outcome scores were observed at three, six, or twelve months.

Conclusions: TAPE improved the quality of the patient's life with knee inflammation reduction, pain diminishment and post-procedure quick recovery.

Perirectal Abscess with Pelvic-Subperitoneal Extension in an Immunosuppressed Patient – Clinical and Therapeutic Considerations

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Introduction: Anorectal abscesses are purulent collections located in the perirectal spaces. The clinical appearance significantly differs depending on their location. Deep abscesses may present general manifestations, with no clinical perianal findings.

Material and method: We present the case of a 37-year-old male patient, previously diagnosed with pemphigus vulgaris and diabetes mellitus, who has been receiving corticosteroid treatment for approximately one year. On admission, the patient presented lower abdominal and perianal pain, altered general condition and acute urinary retention. These symptoms started a week before presentation and progressively aggravated. Local examination revealed a normal-appearing perianal region, with slight changes on digital rectal examination. Laboratory tests showed inflammatory syndrome, hyperglycemia and hypocoagulability. Abdominal computed tomography revealed a large mixed fluid and air content collection, with irregular iodophilic outline, located behind the bladder with pararectal extension, compressing and displacing the rectum to the right side, associated with adjacent inflammatory signs. On emergency surgery we found a retrorectal abscess fused to the right pararectal and pelvic-subperitoneal areas. Incision, wide debridement, lavage and drainage of the abscess were performed.

Results and discussions: The postoperative course was slowly favorable. The antibiogram revealed a plurimicrobial association. Drug-induced immunosuppression, as well as the pathological association with diabetes mellitus, were important risk factors in the occurrence of this pathology. The absence of perianal clinical expression and nonspecific changes in laboratory investigations led to a delay in establishing the diagnosis and caused the expansion of the abscess. Complete healing of the postoperative wound occurred approximately two years after surgery, along with the remission of the autoimmune disease and the discontinuation of corticosteroid therapy.

Conclusions: Early diagnosis, adequate drainage and targeted antibiotic therapy are crucial for rapid healing and prevention of anorectal abscesses septic complications. Furthermore, careful postoperative monitoring is mandatory in the case of an immunosuppressed patient.

More Aggressive Surgical Interventions for Retroperitoneal Tumors?

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Despite progress in medicine, the therapeutic management of retroperitoneal neoplasias, a rare group of very aggressive tumors, has not changed very much, with dismal prognostic. The mainstay of retroperitoneal tumor therapy is still represented by radical surgery. However, nowadays, sarcoma-dedicated study and treatment groups recommend a more- aggressive compartment-surgery to decrease recurrence rates and improve survival. In the current study we **aimed** to evaluate whether a more extensive, aggressive surgery is feasible in retroperitoneal tumor patients and its impact on overall survival.
Patients and methods: The present study was conducted on a group of 122 patients with primary and secondary retroperitoneal neoplasias. We extracted relevant data from the medical charts, comprising patients 'characteristics, pre-operative and intraoperative tumor description, type of surgery, histopathologic and follow-up data in order to analyze the level of surgical complexity, surgical limitations and outcomes, and impact of the surgical extension on patient prognostic.
Results: A radical surgical intervention was performed in 41.1% of the patients. In 19.6% of cases a more aggressive surgery was achieved that involved the resection of adjacent organs, along with the tumor. The most frequently scarified structures were the kidney, psoas muscle and small intestine. Organ resections did not associate better survival or lower local recurrence rates when compared to the no-organ resections group.
Conclusions: Currently, many authors recommend a more extensive, compartment surgery for retroperitoneal neoplasia to improve patient prognostic. However, in the current study, we did not find organ resections to associate lower recurrences rates or a better prognostic when compared to the group of patients with no organ resections. We consider that all efforts should be taken in order to achieve radical surgery with negative resection margins, while unnecessary resections of nearby non-invaded structures could be excessive and potentially harmful.

Metastases after Retroperitoneal Tumor Surgery

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Retroperitoneal tumors represent a rare group of soft tissue neoplasias that raise important problems of treatment. Retroperitoneal tumors are characterized by high recurrence rates, while the metastasizing rates are less significant. Not many authors have studied the metastasizing behavior of such tumors and its prognostic significance. **The aim** of the current study was to analyze the frequency, localization and impact of retroperitoneal tumors metastases on the therapeutic approach and patient prognostic.
Patients and methods: We carried on a retrospective and prospective study on a group of 65 patients with primary retroperitoneal tumors operated on over a period of 16 years. At the end of the study period, all data were retrospectively reviewed and statistically analyzed. We extracted data from the medical charts of the patients in order to evaluate the metastatic behavior of the retroperitoneal tumors and its level of significance for patient survival.
Results: 29.4% of the patients developed distant metastases after the surgical intervention. Interestingly, the occurrence of distant metastases was significantly more frequent after radical than non-radical surgery. However, radical surgery was associated to higher overall survival rates. The mean time from the surgery to the metastasis was of 4.61 months after non-radical interventions and 19.15 months after radical surgery. However, no statistical survival time differences were between the metastatic and non-metastases groups of patients. The treatment of metastases was oncological (chemo- and radiotherapy).
Conclusions: Retroperitoneal tumors usually raise problems related to their tendency to aggressive local and regional recurrences that are difficult to manage therapeutically and represent a frequent cause of death. Fewer studies are concerned with the study of retroperitoneal tumor metastases. Our study has evidenced that a higher postoperative patient survival, as seen after radical surgery, associates higher odds of developing distant metastases that should be promptly diagnosed and treated.

Postpartum Hysterectomy – the Experience of the University Emergency Hospital Bucharest: a Retrospective Study

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Background: Postpartum hysterectomy is a life-saving procedure performed in cases of severe obstetric complications when conservative management fails. Although infrequent, it remains associated with significant maternal morbidity and reflects the most aggressive step in the management of peripartum hemorrhage. Common indications include uterine atony, abnormal placentation (placenta praevia or morbidly adherent placenta), uterine rupture, sepsis, and abruptio placentae.

Materials and methods: We conducted a retrospective, observational study at the University Emergency Hospital Bucharest, analyzing all cases of postpartum hysterectomy performed between January 2019 and December 2023. Data were extracted from hospital records and included maternal demographics, obstetric history, delivery mode, indication for hysterectomy, surgical technique (total or subtotal), intraoperative findings, postoperative complications, ICU admission, and maternal outcomes.

Results: Out of 10,525 deliveries during the study period, 42 women required postpartum hysterectomy, yielding an incidence of 3.99 per 1,000 births. The main indication was abnormally adherent placenta (62%, n=26), followed by sepsis (19%, n=8), uterine atony (12%, n=5), uterine rupture (5%, n=2), and placental abruption (3%, n=1). Cesarean section preceded the hysterectomy in 88% of cases. Total hysterectomy was performed in 62% and subtotal in 38%. Blood transfusions were necessary in 76% of patients, and 69.5% required intensive care admission. No maternal deaths occurred. In 35.7% of cases with suspected abnormal placentation, delivery was planned with multidisciplinary coordination, improving outcomes.

Conclusion: Postpartum hysterectomy continues to be a critical component in managing life-threatening obstetric situations. Early identification of risk factors, timely decision-making, and multidisciplinary surgical care in a tertiary setting are essential to improving maternal prognosis and minimizing complications.

Conservative Management of Postpartum Hemorrhage due to Lower Uterine Segment Atony in a Tertiary Center – Case Report

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Introduction: Postpartum hemorrhage (PPH) remains one of the leading causes of maternal morbidity and mortality worldwide. While uterine atony commonly involves the uterine fundus, isolated atony of the lower uterine segment is rare and may present both diagnostic and therapeutic challenges.

Case presentation: We present the case of a 29-year-old primiparous woman who was admitted to the Emergency Room of the Bucharest University Emergency Hospital on postpartum day 3, following a cesarean delivery performed in a private maternity hospital. Her history included cervical insufficiency, managed during pregnancy with a Mersilene cerclage, which was removed with difficulty at the onset of labor at 37 weeks. After 20 hours of labor, she underwent emergency C-section for labor dystocia and acute fetal distress. On postpartum day 3, she developed significant vaginal bleeding and was brought to our center by ambulance. Clinical examination revealed bilateral cervical commissural lacerations, a friable cervix, active bleeding, and clots. Ultrasound showed a well-contracted uterine fundus with no retained products, but a distended lower uterine segment filled with an 8x5 cm clot. Initial conservative management included transfusion, intravenous carbetocin, ergometrine, tranexamic acid, calcium gluconate, and rectal misoprostol. Bilateral cervicovaginal ligation reduced but did not fully control the bleeding. A CT angiography revealed active extravasation at the right cervical commissure. The patient underwent successful right uterine artery embolization.

Discussion: Lower uterine segment atony is a rare and often overlooked cause of secondary PPH. Conservative and targeted approaches, when promptly applied, can achieve hemostasis while preserving fertility. This case highlights the importance of complete uterine assessment and individualized escalation protocols in postpartum hemorrhage management.

Multiple Cutaneous Metastases Determined by a Cephalopancreatic Tumor

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Objectives: Cutaneous metastases caused by a cephalopancreatic tumor represent an advanced stage of the disease with a poor prognosis. Accurate histopathology diagnosis is followed by a surgical-oncological approach adapted to the advanced stage of the disease.

Methods: We present the case of a 53-year-old smoker working in a toxic environment, with sequelae of TB, who presented to the emergency department for jaundice that had gradually appeared two weeks ago, fatigue, and the appearance of necrotic round skin formations on the sternum, right hemithorax, and right thigh 1 year ago.

Abdominal-pelvic computed tomography reveals a cephalopancreatic mass measuring 37/32 mm axially and 36 mm craniocaudally with inhomogeneous iodophilia projected inter-hepatorenal, in the vicinity of the renal vein IVC and the right adrenal gland. Hepatomegaly and abdominal adenopathy are also revealed. The thoracic cutaneous tumor masses are excised and submitted for anatomopathological examination.

The patient's evolution was marked by the presence of sclerotegumentary jaundice with total bilirubin: 27 and transaminases increased, which required the performance of exploratory laparotomy, cholecystojejunoanastomosis drainage. Postoperatively, the patient's evolution was favorable with remission of jaundice with total bilirubin 6 and a decrease in transaminases.

Results: The piece of cutaneous tumor formation indicates metastasis of acinar adenocarcinoma of pancreatic origin

Conclusions: The appearance of secondary cutaneous metastases to a cephalopancreatic adenocarcinoma after 1 year of age, together with the presence of sclerotegumentary jaundice, may indicate an advanced stage of the disease requiring oncological treatment.

Management of Postcaustic Pharyngolaryngeal Stenosis

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Introduction: Accidental ingestion of caustic substances represents an accurate medical challenge associated with a high morbidity and mortality rate. Mainly in the pediatric population, this phenomenon produces functional and structural long-term complications such as esophageal, pharyngeal, laryngeal, and gastrointestinal disorders. Pharyngolaryngeal stenosis associated with caustic ingestion represents a rare complication but with a severe negative impact on quality of life, requiring a multidisciplinary approach. In most cases, ingested substances are either strong acids (pH below 2.5-2) or strong bases (pH above 12). The harmful effects of caustic solutions depend on several factors, such as the quantity and concentration of the substance and the amount of time the pharyngolaryngeal mucosa is exposed to the substance. Post ingestion, necrosis of the adjacent tissue and hemorrhagic congestion have been identified, which leads to extended ulceration and necrosis of the mucosa.

Materials and methods: This paper aims to present a case of a 20-year-old patient, admitted to „Prof. Dr. Dorin Hociota" Institute of Phonoaudiology and Functional ENT Surgery, diagnosed with post caustic pharyngolaryngeal stenosis. The exploration methods, surgical treatment, and follow-up plan have been presented.

Results: The patient has undergone CO_2 LASER ablation surgery for the stenosis. The patient's neglect of the suggested therapeutic approach and the lack of postoperative follow-up resulted in the complete recurrence of the pathology that needed multiple reinterventions with a favorable outcome.

Conclusions: Pharyngolaryngeal stenosis following caustic ingestion remainsa significant challenge for the otorhinolaryngologist, requiring a stepwise approach to achieve an optimal outcome. LASER CO_2 surgical intervention should be performed once the endoscopic clinical picture has stabilized, as it can restore the patency of the upper airways and laryngeal function. However, it is associated with a high rate of restenosis. Regular videofibroscopic monitoring is essential. Long-term success depends on early diagnosis, appropriate treatment, and proper follow-up care.

Transoral Excision of a Giant Retropharingeal Lipoma Causing Obstructive Sleep Apnea

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Objectives: Retropharyngeal lipomas represent a rare subset of benign mesenchymal tumors, typically identified only after reaching substantial dimensions. Clinical manifestations range from dyspnea and dysphagia to obstructive sleep apnea, depending on the degree of compression exerted on adjacent anatomical structures. Surgical excision remains the treatment of choice. While the transoral approach is preferred for smaller lesions, the transcervical route is generally favored for larger tumors.

Materials and methods: We report the case of a 54-year-old female patient who presented to our clinic with symptoms of dysphagia, dysphonia, and obstructive sleep apnea. Clinical and radiological evaluations revealed a giant retropharyngeal mass with imaging features consistent with a lipoma, causing significant airway compression. We describe the diagnostic methods, surgical treatment, postoperative care, and follow-up plan.

Results: Despite the tumor's considerable size (72 × 35 × 116 mm), given its benign radiologic characteristics and the patient's refusal to accept blood transfusions in the event of massive hemorrhage, a transoral approach was selected. Blunt dissection enabled complete excision of the well-encapsulated mass. Prior to the intervention, a prophylactic T2–T3 tracheotomy was performed to secure patient's airway.

Conclusions: The management of retropharyngeal lipomas poses significant challenges to ENT doctors, as these lesions often present at advanced stages due to their insidious growth. Both transoral and transcervical approaches are viable, depending on tumor size and anatomical considerations. Successful outcomes rely on thorough anatomical knowledge and careful preoperative planning to mitigate potential perioperative complications, especially given the tumor's location in a space delimited by the carotid sheath, skull base, prevertebral fascia, and posterior pharyngeal wall.

Sinonasal Malignant Melanomas – Surgical Management and Follow-Up

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Introduction: Sinonasal malignant melanomas are rare tumors that may affect the nose and sinuses. The most common occurrence of malignant melanomas is on the skin, due to frequent exposure to the sun and UV radiations. The first case of melanoma situated in the nasal mucosa was reported by Lucke in 1869, with the etiology being unclear (possible occupational exposure to formaldehyde). Diagnosis is often delayed because of the insidious symptoms and the advanced disease in the moment of presentation at the hospital.

Material and methods: This paper aims to discuss a series of cases of sinonasal malignant melanomas, where a surgical approach was used, custom-tailored to each case. In all cases the tumor was completely removed, but the type of intervention was adapted to the particularities of each case, considering the extension of the lesion and the local anatomy, especially in patients that were undergoing reinterventions. The result and the subsequent follow-up plan are presented and underlined.

Results: Sinonasal melanomas are characterized by the tendency toward early local recurrences and local extension and the risk of frequent metastasis to lymph nodes and viscera. Another question that we must answer in managing these patients is if we are dealing with a primary or metastatic lesion. An open approach was considered optimal, allowing the thorough control of the resection area. The complete evaluation of the patient by ENT complete examination, imagistic investigations (CT and MRI), a biopsy and an oncologic evaluation are mandatory before deciding the chosen therapy.

Conclusions: The reported series consist of a small number of cases, so no real therapeutical protocol based on large cohorts is available. Surgery remains the first therapeutical option, with radiotherapy and chemotherapy reserved as adjuvant methods or for very advanced stages as palliation. An aggressive follow-up is crucial in diagnosing and treating promptly any possible recurrence.

The Dangerous Intersection of Orbital Trauma and Chronic Rhinosinusitis with Nasal Polyps: a Case Report

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Introduction: Orbital trauma frequently leads to damage involving the optic nerve and extraocular muscles. Successful fracture management requires a detailed understanding of the anatomy and pathophysiology to ensure the restoration of the patient's pre-trauma functional and aesthetic condition.

Materials and methods: This paper presents the case of a 24-year-old male patient admitted to „Prof. Dr. Dorin Hociotă" I.F.A.C.F. ENT Clinic in Bucharest, who presented with a sudden decrease in VA and significant ocular pain following trauma to the eye, allegedly caused accidentally by the horns of a brush cutter. The patient awoke the following morning with marked proptosis. Imaging investigations (cranial CT scan) revealed a heterogeneous mass in the left frontal sinus and left superior orbit, with a well-defined mass effect on the left antero-inferior orbital contents, as well as a left upper eyelid hematoma. The orbital trauma was secondarily infected and its severity was potentiated by the patient's previously undiagnosed and untreated chronic rhinosinusitis with associated nasal polyposis.

Results: The patient underwent surgical treatment, including orbital decompression through the evacuation of a large quantity of purulent secretions, periorbital lifting, and drainage of the localized subcutaneous hematoma in the left upper eyelid region.
Trepanation of the left anterior frontal sinus was performed with aspiration of purulent material. Bilateral polypoid formations were excised. Postoperatively, the patient's symptoms resolved. Follow-up at 4 days showed preservation of visual acuity.

Conclusions: The surgical approach represents a challenge for the ENT surgeon due to the proximity of the orbital neurovascular bundle and ocular muscles. Delaying surgical intervention—even in the absence of other risk factors – can be detrimental to the patient.

„Leave Me Alone" Lesions of Petrous Apex with Clinical Symptoms

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Objective: Lesions of the petrous apex, known as "leave me alone" lesions, are often incidental findings in imaging studies. Though typically asymptomatic, they may occasionally present with varied and nonspecific clinical symptoms. These lesions include benign anatomical variants such as asymmetric fatty marrow, petrous apex effusions, cephaloceles, or cholesterol granulomas. Accurate diagnosis is essential to distinguish them from more aggressive pathologies and to avoid unnecessary surgical treatment.

Method: We reviewed a series of symptomatic cases admitted to an otology department over a three-year period, with imaging findings suggestive of petrous apex lesions. Clinical presentations included hemicrania, facial paresthesias, sudden sensorineural hearing loss, tinnitus, and vertigo. Radiological evaluation via MRI and CT was used to characterize lesion morphology and signal properties. Three representative cases are detailed, highlighting the imaging features and corresponding clinical findings.

Results: Radiological findings varied from non-expansive opacified air cells to hyperintense signals on T1- and T2-weighted MRI sequences. In some cases, fluid retention with high protein content mimicked cholesterol granulomas. While conservative treatment and monitoring were sufficient in most cases, imaging follow-up was crucial in differentiating stable lesions from those requiring surgical treatment. One case suggested a cephalocele involving the Meckel's cave and trigeminal nerve fibers, emphasizing the complexity of differential diagnosis.

Conclusion: „Leave me alone" lesions of the petrous apex are predominantly benign and should be recognized as such to prevent overtreatment. However, when associated with clinical symptoms, a thorough radiological evaluation is necessary to guide management. Long-term follow-up with serial imaging can ensure lesion stability and support a conservative therapeutic approach when appropriate.

Small Bowel Involvement by Retroperitoneal Neoplasias – Implications for the Surgeon

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The radicalness of the surgical interventions is crucial for retroperitoneal tumor patients' prognostic. However, the surgical complexity level is extremely high, associating a significant risk of complications and mortality. The aim of the current study was to evaluate which structures that are involved by the tumor could significantly impede the radicalness of the operation and predict patient survival.

Patients and methods: We conducted a retrospective study on a group of 122 patients with various retroperitoneal neoplasias treated in our clinic over a 16 years period. After analyzing several data from the patients' medical charts, we focused on the preoperative imaging and intraoperative descriptions of the structures that were invaded by the tumor. We inserted relevant variables in the statistical analysis to evaluate which type of tumor- involved organs hold a particular significance for the surgical outcome and patient prognostic.

Results: Retroperitoneal tumors were characterized by large dimensions and frequent involvement of more than one major nearby structure, such as kidneys, ureter, blood vessels, psoas muscle, small intestine, colon, liver and others. The radicalness of the surgical intervention was the most important predictor for patient survival, but its achievement was limited by tumor vascular, as well as small bowel involvement. Tumor invasion into the small bowel was associated with higher morbidity rates and represented a negative predictor of patient overall survival.

Conclusions: Increasingly, extensive, aggressive surgical interventions are recommended to achieve radicalness for retroperitoneal tumors. Radical surgery implies sacrifice of several affected organs that is usually technically possible. However, we found that tumor involvement of the small bowel and blood vessels significantly limited the achievement of radical surgery and represented a negative predictor for patient survival. In such a scenario, preoperative imaging description of small bowel/ blood vessels involvement should trigger thorough reconsideration of the therapeutic plan/operation.

The Adenoid Cystic Carcinoma of the Sinonasal Tract – a Recurrent Surgical Challenge

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Objectives: Representing 1% of all cervico-facial neoplasms, the adenoid cystic carcinoma associates limited data concerning the risk factors and accurate management of patients with advanced disease. The disease contributes to 0.3% of the sinonasal malignancies and it is prevalent in women. The current paper aims to outline both the increasing rate of late recurrence associated with this pathology and the complexity of the optimal surgical treatment.

Materials and methods: A 64-year-old female patient with a history of paranasal sinus adenoid cystic carcinoma (ACC) surgically removed and subsequent proton therapy 9 years prior to the current examination presented mild left exophthalmia and intermittent ipsilateral retro-orbital pain.

Imaging exams revealed a tumoral mass in the middle meatus associating spheno-ethmoidal and apparent invasion of the medial rectus muscle. Subsequently, extensive endoscopic resection of the tumor was performed with preservation of the eyeball, following protontherapy and systematic endoscopic and imaging monitorization and no signs of late recurrence for 9 years. The current examination has identified a late relapse with ipsilateral orbital extension.

Results: Surgical treatment included an orbital exenteration and an eyelidplasty to correct the defect. Due to previous radiation, local dehiscence was identified. Consequently, a medio-frontal flap was later used to repair the subsequent defect. Favorable evolution and complete integration were reported.

Conclusion: The ACC is a rare pathology with limited associated data, especially in the sinonasal area. The insidious growth pattern and the tendency for perineural infiltration along major and minor nerves associate advanced disease presentation with involvement of critical structures, making the treatment difficult and potentially morbid. Both ablative and reconstructive treatment are frequently necessary.

Risk of Intravesical Recurrence after Nephroureterectomy for Upper Tract Urothelial Carcinoma

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Introduction: Intravesical recurrence (IVR) remains a significant clinical challenge following radical nephroureterectomy for upper tract urothelial carcinoma (UTUC). This study aimed to identify and quantify clinical, pathological, and comorbidity-related factors associated with IVR.

Materials and methods: A retrospective analysis was conducted on 247 patients treated with total nephroureterectomy for UTUC. We evaluated the influence of tumor location, pathological stage and grade, postoperative renal function, adjuvant chemotherapy, smoking status, and comorbidities including obesity, diabetes mellitus, and arterial hypertension on the risk of recurrence.

Results: The overall rate of intravesical recurrence was 30.8% (76 of 247 patients). Tumor location represents the most significant predictor, with recurrence rates of 56.7% in ureteral tumors and 61.5% in multifocal cases. Histological grade also played a crucial role: patients with high-grade (G3) tumors experienced a recurrence rate of 34.1%, while no intravesical recurrences were recorded among those with low-grade (G1) tumors. Smoking was associated with an increased risk, with a recurrence rate of 37.2% in smokers compared to 27.3% in non-smokers. Preoperative hydronephrosis correlated with a higher recurrence rate (33.7%) versus patients without hydronephrosis (29%). In contrast, obesity and diabetes mellitus did not show a statistically significant influence on the risk of recurrence.

Conclusions: Intravesical recurrence affects nearly one-third of patients after radical surgery for UTUC. Ureteral and multifocal tumor locations, high-grade pathology, smoking, and hydronephrosis are independent predictors of recurrence. Risk-adapted follow-up protocols emphasizing early cystoscopic and imaging surveillance are essential to optimize long-term outcomes.

Current Management of Urachal Tumors – Clinical Experience Over 20 Years

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Objective: To evaluate clinical and pathological outcomes in a single-center cohort of patients undergoing surgical management for urachal adenocarcinoma over a 20-year period.

Methods: We retrospectively analyzed 28 patients treated for urachal adenocarcinoma between 2005 and 2025. Inclusion criteria required dome-located bladder tumors with characteristic imaging findings. Clinical presentation, surgical approach, pathological staging (Sheldon classification), recurrence patterns, and survival outcomes were assessed.

Results: Partial cystectomy was performed in 75% of patients, while omphalectomy was included in 57% (16 cases). Hematuria was the leading symptom (60.7%). Sheldon Stage II was the most frequent diagnosis (32.1%). Lymph node involvement and distant metastases were observed in 17.9% and 10.7% of cases, respectively. Local recurrence occurred in 32.1% of patients, predominantly in pelvic lymph nodes and the peritoneum; no isolated umbilical recurrences were recorded. Median tumor size was 5.2 cm (range: 1–24 cm). Median survival was 40 months for early-stage disease (Sheldon I), and 18–22 months for advanced stages. Chemotherapy, administered in 13 patients, yielded limited benefit with no complete responses.

Conclusion: Urachal adenocarcinoma presents significant management challenges due to late diagnosis and limited systemic treatment efficacy. Partial cystectomy with urachal ligament excision offers adequate oncologic control in selected cases. Routine omphalectomy may not be necessary, given the absence of isolated umbilical recurrence. These findings support individualized, bladder-sparing surgical strategies and underscore the need for multicenter collaboration to refine treatment guidelines.

Twist at the Tracheobronchial Angle: a Radiographic Clue to Hemodialysis Catheter Malposition

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Objective: An arteriovenous fistula (AVF) is the preferred vascular access for patients with end-stage kidney disease (ESKD) requiring renal replacement therapy. In cases where the AVF is not feasible, a tunneled permanent catheter may serve as an alternative, albeit with a higher risk of complications.

Methods: We report the case of a 69-year-old female patient with ESKD secondary to arterial hypertension, undergoing hemodialysis for the past seven years. She was admitted to the hospital due to dysfunction of a hemodialysis catheter. A tunneled catheter had been inserted into the left internal jugular vein four months earlier, following thrombosis of AVF. The malfunctioning catheter was removed, and a new 28 cm tunneled catheter was inserted unguided via the same vein.

Results: A post-procedural anteroposterior chest radiograph revealed a twist of the catheter near the right tracheobronchial angle, raising concern about incorrect positioning. Subsequent thoracic computed tomography confirmed catheter malposition, identifying its tip within the azygos vein. The catheter was removed and replaced with a 19 cm tunneled catheter. Follow-up chest radiography confirmed correct placement. Proper vascular access is essential for renal replacement therapy in patients with ESKD. While AVFs and grafts are preferred, permanent catheters are often necessary for patients with poor vascular anatomy or limited life expectancy.

Conclusions: Although the internal jugular vein is frequently used for catheter insertion, complications including infection, thrombosis, and malposition may occur. Malposition into the azygos vein is more commonly reported with right-sided approaches. We describe a case of azygos vein catheter malposition following insertion via the left internal jugular vein. A key radiographic indicator—twisting of the catheter near the right tracheobronchial angle – should prompt further imaging to confirm placement and prevent potential complications.

Adjusted Presepsin Cutoffs According to Kidney Dysfunction Severity to Prevent Overdiagnosis of Bacterial Infections

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Objective: Sepsis is a critical condition resulting from excessive immune system activation in response to an infection. Presepsin is a biomarker of sepsis highly correlated with bacterial infection. Presepsin levels tend to rise in patients with kidney dysfunction (KD), potentially leading to bacterial infection overdiagnosis and unnecessary antibiotic use. This study aimed to define presepsin cutoff values tailored to the degree of KD to enhance diagnostic accuracy and reduce the risk of antibiotic overuse and resistance.

Methods: We conducted a single-center retrospective study including all patients admitted to the Internal Medicine I and Nephrology departments of the Bucharest University Emergency Hospital, regardless of age or diagnosis, where presepsin was measured at the emergency department before admission. Kidney dysfunction severity was estimated using serum creatinine (sCr) thresholds of 1.5, 2.0, and 4.0 mg/dL, classifying patients into four KD categories (KD_1 to KD_4).

Results: We found an exponential increase in presepsin with worsening renal function, described by the equation: presepsin = 600.03 × $e^{0.212 \times sCr}$. Presepsin levels significantly differed between KD groups. Receiver operating characteristic (ROC) analysis showed good diagnostic performance for sepsis in KD_1 (AUC = 0.78), KD_2 (0.78), and KD_3 (0.82), but poor performance in KD_4 (AUC = 0.59). The optimal presepsin cutoffs for sepsis diagnosis were approximately 700–982 pg/mL (KD_1), 588–1125 pg/mL (KD_2), 1065 pg/mL (KD_3), and 2260 pg/mL (KD_4), depending on the calculation method.

Conclusions: We recommend presepsin thresholds of ~600 pg/mL for KD_1, ~1000 pg/mL for KD_2, and ~1300 pg/mL for KD_3. In patients with advanced kidney dysfunction (KD_4), presepsin loses diagnostic reliability for sepsis; however, if still applied, a threshold of at least 2200 pg/mL should be considered.

Postoperative Management of Patients with Ruptured Abdominal Aortic Aneurysm: a Case Series (March–May 2025)

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Ruptured abdominal aortic aneurysm is one of the most dramatic vascular emergencies, associated with high perioperative mortality despite advancements in surgical techniques and resuscitation protocols. Surgical success alone does not guarantee survival, as the postoperative period is often marked by hemodynamic instability, multiple organ dysfunction, and severe ischemic complications. In this context, intensive care management plays a crucial role, requiring prompt, targeted, and often aggressive interventions. This case series aims to highlight the critical interventions applied in the ICU and to explore potential prognostic factors influencing postoperative survival in patients with ruptured abdominal aortic aneurysm

Methods: A total of 10 patients with ruptured abdominal aortic aneurysm were included in this case series, all undergoing emergency surgical repair between March and May 2025. All patients were monitored in the intensive care unit (ICU) postoperatively, with management tailored to their comorbidities and complications. It is important to note that all patients were hypertensive, but none were on antihypertensive treatment at home.

Results: Postoperative hemorrhagic shock: 1 patient (10%) developed postoperative hemorrhagic shock and required reoperation for bleeding control.

· Mesenteric ischemia: 2 patients (20%) developed mesenteric ischemia, one of whom required left hemicolectomy and colostomy postoperatively.
· Respiratory dysfunction: 4 patients (40%), all with a history of obesity and smoking, developed postoperative respiratory dysfunction, requiring temporary mechanical ventilation.
· Renal dysfunction: 5 patients (50%) developed postoperative renal dysfunction, all of whom required temporary dialysis.

In total, 4 patients (40%) died due to postoperative complications, including hemorrhagic shock, multi-organ failure, and sepsis.

Conclusions: This case series highlights the complexity of postoperative care in patients with ruptured abdominal aortic aneurysm with a significant risk of complications such as hemorrhagic shock, mesenteric ischemia, and multi-organ dysfunction. Risk factors such as obesity, smoking, and untreated hypertension at home significantly impacted patient outcomes. Postoperative complications contributed to a mortality rate of 40%, emphasizing the need for intensive and personalized management to improve outcomes in this patient group.

Nitrosative Stress as a Cofactor In HPV Pathogenesis

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Objectives: The human papillomaviruses (HPVs) are DNA viruses with tropism for skin and mucous membranes, leading to a wide spectrum of conditions. Among the most common skin lesions are palmoplantar warts, which affect both children and adults. The pathogenic mechanisms involved in HPV infection are incompletely elucidated, however in recent years emphasis has been placed on the role of oxidative and nitrosative stress. In this study, we evaluated markers of nitrosative stress in patients with palmoplantar warts.

Method: We included in the study 36 patients with palmoplantar warts and 36 healthy subjects. We measured the serum levels of nitrites (direct nitrite and total nitrite) and nitrate, which are metabolites of nitric oxide (NO) and we calculated the direct nitrite/nitrate ratio.

Results: We identified statistically significantly higher levels of both nitrites and nitrates in patients with palmoplantar warts compared to the control group (p<0.01).

Conclusion: These results indicate abnormalities in NO pathway and show that there could be a link between the appearance of warts and nitrosative stress.

Gut Microbiome Alterations in Colorectal Cancer: Mechanisms, Therapeutic Strategies and Precision Oncology Perspectives

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Objectives: Our study aims to explore the role of gut microbiome alterations in the development and progression of colorectal cancer (CRC) and to evaluate current and emerging therapeutic strategies based on microbiota modulation. Specifically, we aimed to identify the key microbial mechanisms implicated in colorectal carcinogenesis, assess the efficacy of microbiome-targeted interventions, and highlight future directions in personalized oncology.

Method: A comprehensive literature review was conducted using multiple scientific databases, including PubMed, Google Scholar, Web of Science, and Scopus. The search was guided by predefined keywords such as: „colorectal cancer", „microbiome dysbiosis", „gut microbiota modulation", „microbiome-targeted therapy", and „colorectal neoplasia". To ensure high relevance, only peer-reviewed articles published in English and focusing on human studies were included.

Results: Gut dysbiosis contributes to CRC through mechanisms including chronic inflammation, production of carcinogenic metabolites, epithelial barrier disruption, and modulation of oncogenic pathways (e.g., Wnt/β-catenin, p53). Microbial species like Fusobacterium nucleatum and colibactin-producing Escherichia coli have been linked to tumor growth and therapy resistance. Therapeutic approaches such as probiotics, prebiotics, fecal microbiota transplantation (FMT), selective antibiotics, and dietary interventions show promise in restoring microbial balance and enhancing treatment efficacy. Emerging technologies like artificial intelligence and spatial transcriptomics facilitate the identification of microbiome-derived biomarkers, supporting early CRC detection and personalized treatment strategies.

Conclusion: Microbiome modulation emerges as a compelling adjunct in CRC management. Although challenges such as interindividual variability, causality inference, and lack of clinical standardization persist, integrating microbiome analysis into multi-omics platforms may redefine future oncologic care. Continued translational research is essential to validate these therapies and ensure their effective implementation in clinical practice.

A Legacy of Stones: a Case of Familial Cystinuria

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Objectives: Presentation of a complex clinical case of familial cystinuria and its complications.
Method: A 29-year-old female with a history of recurrent renal lithiasis, the first episode starting ata the age of 4 with a renal colic and resulting in percutaneous nephrolithotomy (PNL) on the left side, followed by other PNL interventions on the right side in 2007 and 2010. Currently, the patient has a total of 28 endourological interventions (PNL and ESWL). However, at presentation, the patient had a normal renal function (creatinine = 0.66 mg/dl; serum urea = 23 g/dl; RGF CKD EPI 2021 = 120.95 ml/min/1.73 m2), with a urine pH of 7, but with the presence of persistent microscopic hematuria.
Other important elements of the medical history are the presence of a bicornuate uterus with a slight apposition of the abdomino-pelvic organs . Also, from the familial history, it is known that the maternal uncle was diagnosed with repeated episodes of obstructive renal lithiasis.
Results: To establish the diagnosis, biochemical analysis of the kidney stones was performed, demonstrating the presence of cystine. Also, urine analysis showed elevated urinary cystine levels.
The patient was prescribed Cupripen 250mg*2 per day and upped her liquid intake for better hydratation . She has not required any further urological interventions and is currently being monitored every 3 months by ultrasound examination.
Conclusions: This case shows the impact of cystinuria on the patients' quality of life, as they require multiple interventions to eliminate the stones throughout their lifetime. For these patients, long-term monitoring of renal function is necessary, the risk of developing chronic kidney disease being very high.

When Stones and Bones Tell the Same Story: a Case of Primary Hyperparathyroidism

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Objectives: To present the case of a 49-year-old patient with recurrent bilateral nephrolithiasis, progressive chronic kidney disease (CKD), and early-onset osteoporosis, in whom primary hyperparathyroidism (PHPT) is currently suspected as a systemic contributor.
Method: In 2022, the patient was admitted with urosepsis and had two previously placed double-J ureteral stents, with the left one calcified. She experienced recurrent urinary tract infections and required several hospitalizations for stent replacements. In 2023, renal function was preserved (creatinine 0.69 mg/dL) and ionic calcium was normal, but no endocrine evaluation was performed. By 2025, renal function had deteriorated (creatinine 3.44 mg/dL, urea 118.5 mg/dL). CT imaging revealed a right staghorn calculus with grade III hydronephrosis, bilateral microlithiasis, cortical thinning, and chronic perirenal inflammation. Osteoporosis was diagnosed despite recent onset of menopause (November 2024). In 2025, PTH was markedly elevated (706 pg/mL; ULN 74.1), with mildly increased total calcium (10.73 mg/dL). Tc-99m Sestamibi scintigraphy showed persistent uptake in the upper portion of the left thyroid lobe, suggestive of a parathyroid adenoma. On thyroid scintigraphy, a „cold" nodule was identified in the same region, reinforcing a parathyroid rather than thyroid etiology. Renal scintigraphy confirmed bilateral lithiasis and significant left kidney dysfunction (left: 30%, right: 70%).
Results: The clinical, biochemical, and imaging findings support a working diagnosis of PHPT, though secondary hyperparathyroidism due to chronic kidney disease remains a differential. Given the preserved function of the right kidney, surgical management of the obstructive staghorn calculus is now being planned.
Conclusions: This case underscores the importance of early endocrine evaluation in patients with recurrent lithiasis and bone loss. Integrated care, including parathyroidectomy and timely urological intervention, may help preserve renal and skeletal function.

Fetal Inflammatory Response Syndrome – Early Neonatal Implications

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Fetal Inflammatory Response Syndrome (FIRS) is a systemic fetal response triggered by intrauterine exposure to inflammatory factors, most commonly of infectious origin. Biologically, it is characterized by elevated levels of proinflammatory cytokines in the fetal circulation, particularly interleukin-6 (IL-6), and has important implications for neonatal transition and the risk of early morbidity. FIRS is frequently associated with intrauterine infections (chorioamnionitis), but it may also occur in non-infectious contexts such as severe preeclampsia or intrauterine growth restriction.

This clinical entity has multiple consequences for the newborn, especially in the early neonatal period. Early complications include early-onset neonatal sepsis, respiratory disorders, bronchopulmonary dysplasia, and inflammatory-type brain lesions such as periventricular leukomalacia. Recent studies have shown that elevated IL-6 levels in umbilical cord blood can serve as a predictive biomarker for these unfavorable outcomes.

In this e-poster, we present the results of a prospective study conducted in the Neonatal Intensive Care Unit of Bucharest University Emergency Hospital, which included 125 preterm newborns. IL-6 levels were measured in blood samples collected from the umbilical cord at birth, with the aim of assessing the association between elevated IL-6 levels and the occurrence of early neonatal complications: early-onset sepsis, respiratory distress, inflammatory brain lesions, and hemodynamic instability.

The study results support the usefulness of IL-6 as an early predictive marker of fetal inflammation and of the risk for adverse postnatal outcomes, thus enabling risk stratification and individualized therapeutic management from the first hours of life. Additionally, the potential inclusion of IL-6 in a standardized evaluation protocol for preterm neonates at risk of FIRS is discussed.

The conclusions emphasize the need for an integrated, biomarker-based approach for the early recognition of fetal inflammation and the optimization of neonatal interventions, with the goal of reducing morbidity and improving long-term outcomes.

The Incidence of Cardiometabolic Risk Factors in Patients with Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD)

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Objective: The diagnosis of MASLD should be suspected in patients with hepatic steatosis detected by high level transaminases or imaging without a specific cause when metabolic risk factors are present such as hypertension, type 2 diabetes mellitus or a high fasting plasma glucose level, obesity or dyslipidemia. This case series aims to highlight the incidence of risk factors among patients with hepatic steatosis included in this study.

Methods: 50 patients were evaluated for the last 6 months diagnosed with steatotic liver disease with a range of CAP score 238-400 dB/m, without a specific cause such as hepatitis, hemochromatosis, autoimmune disease, primary biliary cholangitis, Wilson disease, alpha-1 antitrypsine deficiency, celiac disease. We evaluated the incidence of each metabolic abnormalities by measuring the blood pressure, taking blood samples to determine de glucose and lipid plasma level and by calculating the body mass index.

Results: This analysis revealed that 7 patients with CAP score between 238-260 dB/m (steatosis grade 1) had a systolic blood pressure of 145-165 mmHg and 6 patients with a CAP score of 260-290 dB/m (steatosis grade 2) had a more severe systolic blood pressure 170-180 mmHg. 2 patients had stage three of steatosis with a CAP score >300 and suffered from severe hypertension with systolic blood pressure >185 mmHg. The incidence of obesity (BMI >30 kg/m^2) was 28%, found in 14 cases of steatosis grade 2. Type 2 diabetes mellitus had an incidence of 16%, 8 patients with steatosis grade 1. Dyslipidemia was present in 13 patients with grade 3 steatosis, with an incidence of 26%.

Conclusion: The stages of steatosis vary with the severity of cardiometabolic risk factors, and it is essential to assess for screening and treatment as soon as possible.

Severe Acute Kidney Injury Following High-Dose Statin Therapy in a Patient with Peripheral Arterial Disease: a Case Report

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Objective: To report a case of severe acute kidney injury (AKI) due to statin-induced rhabdomyolysis in a patient presenting with a serum creatinine of 12 mg/dL and multiple cardiovascular comorbidities. Rhabdomyolysis is a potentially severe condition and a common cause of AKI, especially in older patients treated with statins and multiple other medications.

Methods: A 68-year-old male with a 10-year history of peripheral arterial disease (PAD) presented with progressive lower and upper limb pain three weeks after initiating high-dose atorvastatin. His medical history included PAD, hypertension, permanent atrial fibrillation, dyslipidemia, chronic alcohol use, and former tobacco use (15 pack-years, ceased 10 years prior). Chronic medications included pentoxifylline, indapamide, an ACE inhibitor, and prior low-dose statin therapy. On admission, laboratory tests revealed severe AKI (serum creatinine 12 mg/dL), normocytic anemia, markedly elevated creatine kinase (confirming rhabdomyolysis), and increased hepatic enzymes (LDH, AST, ALT). Urinalysis showed proteinuria and hematuria. A CT scan revealed bilateral renal cysts and two hepatic cysts.

Results: The clinical presentation and laboratory findings were consistent with statin-induced rhabdomyolysis leading to AKI. The patient was managed with supportive care, including hydration, discontinuation of nephrotoxic agents and statins, and intermittent hemodialysis. His condition gradually improved, and by the time of hospital discharge, his serum creatinine had decreased to 1.18 mg/dL.

Conclusion: High-dose statin therapy in elderly patients with PAD and multiple comorbidities may significantly increase the risk of rhabdomyolysis and subsequent AKI. Vigilant monitoring of renal function is crucial following statin treatment, especially in complex cardiovascular patients.

Case Series of Primary Hyperparathyroidism in a Tertiary Diagnostic Center

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Objectives: Primary hyperparathyroidism (PHPT) is an endocrine disorder caused by autonomous parathyroid hormone secretion from one or more parathyroid glands. The elevated levels of parathyroid hormone typically led to chronic hypercalcemia. Clinical presentation is variable, ranging from asymptomatic disease to osteoporosis, nephrolitiasis or gastrointestinal symptoms. Recently, new forms of hyperparathyroidism were described, including the normocalcemic type. The standard treatment is surgery, tipically followed by normalization of both parathyroid hormone and serum calcium levels.

Methods: We have analysed 8 pacients from our clinic diagnosed with PHPT. All pacients were women with ages between 24 and 78 y.o. at the moment of diagnosis. Seven of them presented with osteoporosis or renal stones, while one was asymptomatic. All pacients presented typical biological markers for hyperparathyroidism: elevated levels of parathyroid hormone, seric calcium and some also presented low leves of seric phosphorous. After using different imagistic methods to localise the parathyroid adenoma, including ultrasound, SPECT-CT and 99mTc-sestamibi scintigraphy, all the pacients were directed to the surgery department. During surgery, Indocyanine green Fluorescence Angiography was used as an advanced method to conserve the viable, normal parathyroid glands.

Results: In all the cases, the levels of parathyroid hormone and calcium decreased by more than 50% in the first 10 minutes after rezection. There were no complications during or after the surgery. The pacients need to be further monitored clinically and biologically including osteodensitometric evalution.

Conclusions: PHPT is a relatively rare and often underdiagnosed condition. However, awareness has significantly increased due to the proactive use of biochemical testing, particularly serum calcium measurements. It is important to recognize that the clinical presentation may be influenced by an underlying secondary etiology. Patients might present with complications at the time of diagnosis, making it essential for clinicians to investigate and identify the primary cause.

Cranial Ultrasonography in Management of Post-Hemorrhagic Ventricular Dilatation in Preterm Infants

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Background: Intraventricular hemorrhage is a common complication encountered in premature infants, and it influences both the survival and neurological outcomes of these patients. The hemorrhagic process not only damages the involved anatomical structures, but it may also impair circulation of cerebrospinal fluid through the ventricular system, leading to post-hemorrhagic ventricular dilatation. Appropriate medical intervention is based on information provided by serial cranial sonographic evaluations which quantify structural alterations and may estimate increased intracranial pressure.

Objective: To identify the most reliable sonographic criteria for monitoring ventricular dilatation and predict the need for neurosurgery and neurological deterioration. Methods: We performed a literature review to determine the most relevant ventricular measurements considered by neurosurgeons, neonatologists, and pediatric neurologists to best reflect the risk of periventricular white matter injury and elevated intracranial pressure, thereby anticipating neurological developmental impairment.

Results: Medical centers worldwide apply different ultrasonographic protocols for the management of post hemorrhagic ventricular dilatation, including multiple measurements in various planes. (Ventricular Index, Anterior Horn Width, Evans Ratio, Fronto-Occipital Horn Ratio, Fronto-Temporal Horn Ratio). Each of these measurements has advantages and disadvantages which are described in our research. Although personal or institutional experience may influence data collection and interpretation, the three-dimensional picture of ventricular dilatation is best captured when more than one index or ratio is used.

Conclusions: A consistent, serial, and comprehensive cranial ultrasound examination is an indispensable tool for diagnosing and monitoring of neurological complications in preterm infants; adhering to a standardized protocol and proper training can make a difference in guiding adequate medical intervention and improving long-term developmental outcomes.

Genetics Behind a Cardiac Arrest in a Young Patient – a Case Report

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Objectives: Desmoplakin (DSP) is a structural protein in cardiac desmosomes, essential for mechanical integrity and cohesion in myocardial tissue. Mutations in the DSP gene cause arrhythmogenic cardiomyopathy (ACM), marked by ventricular arrhythmias, fibrofatty myocardial replacement, and increased risk of sudden cardiac death (SCD). Unlike classical ACM, which predominantly affects the right ventricle, DSP mutations often result in left-dominant or biventricular disease.

Methods: We present the case of a 39-year-old woman who experienced a cardiac arrest caused by ventricular fibrillation. She received an implantable cardioverter-defibrillator (ICD) for secondary prevention of SCD. Coronary artery disease was excluded. Two years later, she presented a syncope related to sustained ventricular tachycardia (SVT), which was terminated by ICD intervention.

Results: ECG showed low QRS voltage and negative T-waves in leads V2−V6. Echocardiography revealed normal left ventricle (LV) dimension with ejection fraction of 48% and longitudinal systolic dysfunction. Cardiac MRI showed mild LV dysfunction and subepicardial LGE with ring-like pattern. Genetic testing identified a pathogenic DSP variant (p.Arg150*). She is on metoprolol 25 mg daily and avoids high-intensity physical activity. As part of family screening, her father and brother were also found to carry the same DSP mutation. They were asymptomatic, with normal systolic function, isolated myocardial fibrosis, and a low risk of life-threatening arrhythmias according to the DSP-risk score. All affected members exhibit cutaneous findings suggestive of a DSP mutation – woolly hair and palmar keratosis.

Conclusion: Our patient met the 2024 European Task Force diagnostic criteria for ACM including systolic dysfunction, ring-like fibrosis, low QRS voltage and negative T wave, SVT, and DSP mutation. Multimodality imaging and genetic testing played a crucial role in establishing the final diagnosis in a young patient with a history of cardiac arrest. This case highlights intrafamilial variability and incomplete penetrance in cardiac genetic diseases, underscoring the importance of careful family screening to detect other affected members.

Epidemiological and Microbiological Profile of Healthcare-Associated Sepsis in Oncology Patients at a Tertiary Care Center: a Retrospective Study (2023-2024)

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Objectives: This study aimed to describe the epidemiology, etiology, antimicrobial resistance, and ward-specific distribution of healthcare-associated sepsis in oncology patients.

Materials and methods: Healthcare-associated sepsis cases recorded between 2023 and 2024 at „Prof. Dr. Alexandru Trestioreanu" Oncology Institute in Bucharest were included in this retrospective observational study. A descriptive analysis was performed using the Statistical Package for the Social Sciences (SPSS) software, based on the WHONET database from the hospital.

Results: A total of 240 healthcare-associated sepsis cases were recorded, of which 135 (56.3%) occurred in female patients. The most frequently isolated pathogens were *Staphylococcus* spp. (n=108; 45%), followed by *Escherichia coli* (n=34; 14.2%) and *Klebsiella* spp. (n=32; 13.3%). *Staphylococcus* spp. sepsis was significantly more frequent in males (62/108 cases, p<0.001), whereas *Escherichia coli* (25/34 cases, p=0.028) and *Klebsiella pneumoniae* (15/19 cases, p=0.038) were more common in females. Fungal sepsis caused by *Candida* spp. (n=10; 4.2%) occurred exclusively in female patients. Regarding antimicrobial resistance, methicillin resistance (MRSA) was observed in 15 out of 23 *Staphylococcus aureus* cases (65.2%). Among the 75 *Enterobacterales* cases, 13 (17.3%) were extended-spectrum beta-lactamase producers (ESBL), and another 13 (17.3%) were carbapenem-resistant (CRE).

Significant ward-specific distributions were noted for CRE and *Acinetobacter* spp. in the Intensive Care Unit (5/13 cases, p=0.003; and 4/8 cases respectively, p=0.008), and for *Serratia* spp. in the radiotherapy ward (3/4 cases, p=0.033). All six *Staphylococcus aureus* cases detected in surgical wards were methicillin-resistant.

Conclusions: Healthcare-associated sepsis remains a significant challenge in oncology patients. The increased frequency of multidrug-resistant strains highlights the importance of antimicrobial stewardship programs alongside prevention, early diagnosis, and optimized treatment strategies.

Metastatic Tropism to the Pancreas in Clear Cell Renal Carcinoma: Case Series and Review of a Rare Entity

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Objectives: To describe the clinical presentation, imaging features, and diagnostic approach of pancreatic metastases from clear cell renal cell carcinoma (ccRCC) through a case series and to review the literature regarding diagnostic strategies and treatment options. ccRCC is the most common and aggressive subtype of renal cancer in adults, with frequent metastases to the lungs, bones, and liver. Pancreatic metastases are rare (2–6%), but clinically significant due to diagnostic challenges and potential confusion with primary pancreatic tumors. Their late onset, often years after nephrectomy, and atypical presentation warrant diagnostic confusion.

Methods: We retrospectively analyzed four cases of patients with a history of ccRCC who presented with suspicious pancreatic lesions identified via CT imaging between 2018 and 2021. Endoscopic ultrasound (EUS) was used to further characterize the lesions, followed by fine-needle aspiration (FNA) or fine-needle biopsy (FNB) for histopathological confirmation. Relevant studies on ccRCC pancreatic metastases were reviewed and discussed.

Results: All four patients had hypervascular pancreatic lesions, with varied localization (head, body, tail) and sizes ranging from 20 to 68 mm. EUS revealed hypoechoic, well-demarcated or mixed-consistency lesions with Doppler vascularity. Histopathological analysis confirmed metastatic ccRCC in all cases. In one case, a hemorrhagic complication occurred but was self-limited. Literature findings support EUS-FNA/FNB as a highly sensitive, minimally invasive diagnostic tool, and highlight the emerging role of local therapies such as EUS-guided radiofrequency ablation (RFA) in selected cases.

Conclusion: Pancreatic metastases from ccRCC are rare but clinically important. EUS with guided biopsy enables accurate diagnosis and should be part of the evaluation in patients with a history of RCC and pancreatic lesions. Personalized treatment, including surgery or local ablation, may improve outcomes, particularly in isolated metastases.

Renal Involvement in Lymphoproliferative Disorders: a Focus on Malignant Hypercalcemia

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Objectives: To describe the diagnostic and therapeutic approach to a case of severe, treatment-refractory hypercalcemia secondary to Adult T-cell Leukemia/Lymphoma (ATLL), a rare subtype of non-Hodgkin T-cell lymphoma associated with HTLV-1 infection.
Method: A 32-year-old female presented initially with signs of generalized peritonitis and was hospitalized in the general surgery department. Shortly after discharge, she returned with severe deterioration in general condition, somnolence, marked leukocytosis, critical hypercalcemia (serum calcium: 27.54 mg/dL) and cholestasis. Despite stable renal function, emergent laparotomy was performed to rule out abdominal sepsis. Further clinical suspicion of hematologic malignancy prompted additional investigations including CT, bone marrow biopsy, ganglionic biopsy, and serologic testing for HTLV-1. CT revealed generalized lymphadenopathy. A bone marrow biopsy revealed infiltration with atypical T lymphocytes. Subsequent serology was positive for Human T-lymphotropic Virus type 1.
Results: Histopathological and immunohistochemical evaluation confirmed the diagnosis of non-Hodgkin T-cell lymphoma, ATLL subtype. Conservative management of hypercalcemia (volume repletion, loop diuretics, bisphosphonates, dexamethasone) was ineffective. Hemodialysis via right internal jugular CVC was initiated but failed to significantly reduce serum calcium levels. Continuous veno-venous hemodiafiltration (CVVHDF) with Oxiris filter and circuit heparinization was implemented. Following HDF, serum calcium levels decreased to 14.6 mg/dL, marking the most substantial improvement. The patient was subsequently transferred to the hematology department for disease-specific therapy, multidisciplinary approach being essential.
Conclusions: Acute ATLL is often associated with life-threatening malignant hypercalcemia due to overproduction of PTHrP and osteoclast-activating cytokines. When resistant to standard treatment and intermittent hemodialysis, continuous renal replacement therapy (CRRT), such as CVVHDF, may be necessary and effective. Although heparin remains widely used for circuit anticoagulation, regional citrate anticoagulation, which acts as both anticoagulant and calcium chelator, may offer superior outcomes in managing refractory hypercalcemia, highlighting the need for broader access to citrate-based protocols.

Understanding the Role of Artificial Intelligence in Cutaneous Lesion Management: Insights from Romanian Medical Professionals and Students

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Objectives: This study aimed to comprehensively assess the awareness, perception, attitudes and expectations regarding Artificial Intelligence (AI) in cutaneous lesion management among Romanian medical professionals and students. Given the rapid advancements and integration of AI in dermatology, understanding these perspectives is crucial for effective AI integration and educational strategy development in dermatology.
Methods: A cross-sectional study was conducted using a 30-item anonymous online survey. The questionnaire was designed to explore demographic information, AI awareness and knowledge, perception and attitude towards AI, expectations regarding AI usage and AI application in tumoral cutaneous lesion management. A total of 960 responses from medical students and medical professionals were analyzed.
Results: High AI concept familiarity (95.4%) was observed among participants, yet only 22% had prior practical AI use in dermatology. Over 90% of both students and physicians expressed that AI training programs would be useful in their current practice. The hybrid AI-clinician model was perceived favorably, with 56.2% of respondents considering it the future gold standard in cutaneous lesion management. However, skepticism remained regarding AI's standalone diagnostic capabilities, with 62.2% doubtful about AI's ability to differentiate between benign and malignant cutaneous tumors with accuracy comparable to a non-dermatologist physician. Notably, participants with greater practical familiarity with AI were significantly more confident in its diagnostic capabilities. Furthermore, dermatologists were identified as the most skeptical professional category concerning AI replacing medical professionals (p = 0.006).
Conclusions: Romanian medical professionals and students demonstrate a positive overall attitude towards AI in healthcare and a strong interest in AI-based education, both theoretically and practically. Increased familiarity with AI applications correlates with higher confidence in their utility. These findings underscore the critical importance of providing comprehensive AI training to foster solid knowledge and support the informed integration of AI into medical education and practice in Romania.

Perceptions of Romanian Medical Students on Telemedicine: Insights into the Future Integration of Digital Health Technologies in Clinical Practice

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Objectives: This study aims to evaluate Romanian medical students' knowledge, attitudes and perceived barriers regarding telemedicine, with the goal of assessing their readiness to adopt digital health technologies in clinical practice.

Methods: A cross-sectional study was conducted, using an online questionnaire disseminated via academic platforms and social media. The survey comprised 21 items assessing demographics, familiarity with telemedicine, perceived advantages and disadvantages and openness to integrating telemedicine into future practice. Ethical approval was obtained from the „Carol Davila" University Ethics Committee.

Results: A total of 608 students from all Romanian medical universities responded. While 61.7% reported familiarity with telemedicine, only 11.7% had used such services personally. The most common perceived benefits included time savings (81%), continuous monitoring of chronic conditions (77.3%) and improved access to specialists (76%). However, concerns were raised about limitations in physical assessment (88.7%), preference for in-person consultations (74.7%) and data security (31.1%). Most respondents (78.8%) believed telemedicine could positively impact healthcare quality. Despite this, 86% had not received any formal training, though 84.4% recognized its educational value. Statistically significant associations were found between age, academic year and familiarity with telemedicine (p < 0.001) and between familiarity and willingness to adopt telemedicine (p < 0.001). The majority (51.5%) expressed willingness to incorporate telemedicine into future practice.

Conclusions: Romanian medical students demonstrate a generally positive attitude towards telemedicine, acknowledging its potential to optimize medical services. However, the lack of formal training and practical exposure may hinder its integration. Curricular reforms introducing structured telemedicine education, coupled with infrastructural and regulatory support, are essential to empower future healthcare professionals in Romania's evolving digital health landscape.

Two Decision Making Algorithms Regarding Rabies Post-Exposure Prophylaxis

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Objectives: Rabies continues to be endemic in the fox population in Romania. Wildlife rabies immunisation programmes have reduced the incidence of zoonotic cases but the risk for transmission to humans persists. Our aim was to develop a visual tool to facilitate the rabies risk evaluation and the management of exposed patients presenting at the Rabies Prevention Centre at the National Institute of Infectious Diseases "Prof. Dr. Matei Bals" (NIID), Bucharest, Romania

Methods: We reviewed current guidelines for rabies post-exposure prophylaxis (PEP) including the 2024 World Health Organisation guideline, the European Centre for Disease Control recommendations, and the European AIDS Clinical Society guidelines. The review focused on rabies risk assessment based on the type and status of the animal involved, as well as the characteristics of the wound. Regarding the prophylactic measures, we examined the biological products available in Romania and used in our institute (vaccines, serum, immunoglobulin etc.), detailing the route of administration, timing, and optimal dosing, tailored to the patient's immune status.

Results: We developed two decision-making algorithms. The first algorithm focuses on risk assessment based upon animal status and incorporates key variables such as the presence of clinical signs suggestive for rabies, the animal's vaccination status, and the circumstances of the exposure. The second algorithm addresses wound-related risk, considering the species involved, anatomical locations of lesions, wound depth, and presence or absence of bleeding. These algorithms are structured as step-by-step questions to assist clinicians in determining the appropriate post-exposure prophylaxis approach. Additionally, we summarised the prophylactic biological products including dosage, route, timing, and duration of administration.

Conclusions: These tools are designed to support faster and more accurate assessment of rabies-exposed patients, improving clinical decision-making in Romanian Rabies Prevention Centres.

The Prevalence of Healthcare-Associated Infections in „Sf. Ioan" Emergency Clinical Hospital, Bucharest, May 2023

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Introduction: The point prevalence survey (PPS) of healthcare-associated infections (HAIs) is a simple, rapid tool to estimate the prevalence of HAI and the antibiotic use at the level of the health facility.

Objectives: To present the result of 2023 PPS study in the „Sfântul Ioan" Emergency Hospital in Bucharest.

Materials and methods: Between 16 and 31 May 2023 we carried out a PPS study in all 17 wards (631 beds) of our hospital, which has the following specialties: Orthopedics, Cardiology, Internal medicine, Gastroenterology, Nephrology, Urology, Vascular and General Surgery, Plastic surgical procedure and reconstructive microsurgery, Obstetrics gynecology, ICU, Neonatology.

We have collected data about the type of HAIs, microorganisms, and types of antibiotics based on the ECDC methodology. The software Helics. Win.Net. was used for analysis.

Results: A total of 361 patients met the criteria (they were living full-time in the hospital and not discharged at the time of the survey) and were included in the study. The bed occupancy rate was 59.11%. Eleven HAI were identified in 11 patients, with a prevalence rate of 3.05%.

The infections detected were: 2 sepsis (SYS-CSEP), 2 surgical wound infections (SSIs), 3 respiratory infections (PNs), 3 urinary tract infections (UTIs), one skin infection (SSTs).

The following germs were isolated: *Staphylococcus Spp, Klebsiella Spp, SARS-CoV-2, Escherichia Coli, Enterococcus Spp, Pseudomonas Spp and Proteus Spp.*

242 patients (67.03%) received antibiotic treatment.

At national level, out of the total 21,866 patients included in the national PPS 2023, 674 patients had active HAIs according to the case definition, with a prevalence rate of 3.1%.

Conclusions: The HAI prevalence rate identified in our hospital was comparable to the rate observed in the national PPS study. Antibiotic prescribing rates were elevated.

PPS must be conducted periodically to understand the trend of HAIs and the rates of antibiotic use.

Clinical and Dermoscopic Insights into Localised Cutaneous Rosai-Dorfman Disease: a Report of Two Cases

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Objective: Cutaneous Rosai-Dorfman Disease (cRDD) is an extremely rare variant of extranodal Rosai-Dorfman Disease, characterized by a benign histiocytic proliferation of unknown cause. This study aims to enhance the understanding of dermoscopic patterns associated with cRDD to aid in its clinical recognition and differentiation from other cutaneous neoplasms.

Methods: We present two cases of cRDD confirmed by histopathology. Systemic involvement was excluded in both patients through comprehensive clinical and paraclinical evaluation. The first patient was a 51-year-old female with two new, firm, pinkish, dome-shaped papules on her face. The second was a 48-year-old female, with a history of treated breast cancer, who presented with a rapidly enlarging pink nodule on her right arm. Dermoscopic examination was performed on the lesions of both patients.

Results: Dermoscopy of the facial papules revealed a well-defined, pinkish-orange, structureless background with keratotic follicular openings, white-yellowish globules, and peripheral branched vessels in both lesions. The arm nodule showed a well-defined, pinkish-orange appearance with diffuse polymorphic vessels and fine scales on the surface. Neither patient had clinical lymphadenopathy or relevant paraclinical abnormalities, leading to the diagnosis of purely cRDD.

Conclusion: While presenting with some variability, a common clinical aspect of cRDD is a well-defined, elevated, and indurated pinkish lesion. Dermoscopically, a pinkish-orange background combined with specific vascular patterns (branched or polymorphic) appears to be a common denominator. Due to the rarity of cases, histopathology remains the gold standard for diagnosis. Dermoscopy is a valuable non-invasive tool that can enhance diagnostic suspicion, but more studies are needed to establish a clearer spectrum of dermoscopic clues for cRDD.

Preliminary Clinical Experience in the Assessment and Treatment of Spatial Neglect Post-Brain Injury

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Objectives: Unilateral Spatial Neglect (USN) is a neurological disorder that impairs a person's ability to perceive objects or events on one side of their visual field, usually on the side opposite the brain injury. This condition increases the likelihood of prolonged hospitalization, limited improvement in motor skills, difficulties returning to work, additional admissions to long-term care facilities, possible psycho-cognitive decline, and a significant decline in quality of life. Our goal is to objectively evaluate the beneficial effects of a standard rehabilitation program for USN after brain injury and to measure its impact according to the severity of USN and its stage.

Method: We evaluated patients at different recovery stages in our clinic, all showing varying levels of USN, due to various brain injuries such as stroke, brain hemorrhage, tumors, or aneurysms. Participants underwent a standard rehabilitative treatment: kinesiotherapy. To assess their condition, we employed several assessment tools, including The Sunnybrook Neglect Assessment Procedure, which comprises drawing tests, a line cancellation test, a line bisection test, and a figure cancellation test; the Montreal Cognitive Assessment; the Activities of Daily Living scale; the Functional Independence Measure; the Functional Assessment Measure; the Catherine Bergego Scale; and the WHOQOL-BREF. These evaluations provided critical insights into the severity of neglect, its impact on recovery, and overall quality of life.

Results: Following only two weeks in the physiotherapy program, which featured active limb exercises, all patients demonstrated a statistically significant improvement according to the evaluation scales. The level of progress in hemineglect syndrome differed among patients, where those in the subacute phase exhibited more notable advancements compared to those in the chronic phase.

Conclusions: Optimizing evaluation and treatment algorithms for these patients will result in more effective therapy that benefits patients as well as the healthcare and social systems.

Behavioural and Laboratory-Based Surveillance of Sexually Transmitted Infections in Risk Populations

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Objectives: To implement harmonized behavioural, clinical, and microbiological data collection in individuals with multiple sexually transmitted infection (STI) risk factors, as part of a prospective cohort study.

Methods: We conducted a cross-sectional baseline assessment of adults with predefined STI risk factors. Participants completed a self-administered questionnaire, provided clinician-collected swabs from multiple sites (urethral/cervical, rectal, oropharyngeal) and venous blood, for multiplex polymerase-chain reaction and serology testing.

Results: 21 adults (19 men, 2 women; mean age 36.4 ± 12.8 years) were enrolled between May-June 2025. Eleven participants reported exclusive sex with men (MSM), five with women, and five with both. The median of sexual partners in the previous six months was 4 (IQR 2-6). Active syphilis was found in 8 participants (38%), and an additional 3 had serological evidence of historical syphilis. HIV was diagnosed in 3 men (14.2%), one of them newly diagnosed. *Ureaplasma urealyticum* was detected in 7 participants (33.33%): 4 pharyngeal samples, 3 urethral samples, and 1 rectal sample; *Neisseria gonorrhoeae* was detected in one participant at both pharyngeal and rectal sites; one pharyngeal specimen was positive for *Mycoplasma genitalium*. Despite existing risk behaviours, only 6/21 perceived their STI risk as high. Condom use was inconsistent (19% always, 14% never), app-based dating was reported by 76.2%, and 3 participants used recreational drugs during sex.

Conclusions: High STI rates, coupled with low perceived risk, highlight the urgent need for intensified screening, particularly at extragenital sites, and personalized counselling for Romanian key populations. The testing campaign is unmasking a severe STI burden, otherwise likely undetected with standard screening practices.

Psychosocial Burden, Disclosure and Major Life Decisions Impact in Adults with Genital Herpes

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Objectives: To analyze the quality-of-life (QoL) impairment, stigma, disclosure anxiety, coping behaviour and life-decision changes in adults with genital herpes simplex virus (HSV).

Methods: A 137-item questionnaire was completed by 11 recruited out-patients from Colentina Clinical Hospital Bucharest, 2nd Department of Dermatology. Items covered demographics, yearly recurrence counts, a global QoL assessment, five-point stigma/attitude items and 32 major life-decision items (0 - 4 influence scale). Descriptive statistics and Spearman correlations (r) were calculated.

Results: Participants were predominantly male (82%), urban (100%) and university-educated (73%), with a mean age of 38 ± 9. Mean annual HSV outbreaks reduced during 2020-21 (1.3) but increased to 2.6 in 2024 (range of 0 - 10 annual outbreaks). Global QoL impact averaged 4.5 ± 2.9 on the 1 - 10 scale, and stigma composite was 2.6 ± 1.0 on the 1 - 5 scale. Stigma correlated with poorer QoL (r = 0.79), fear of disclosure (r = 0.66) and anxiety/depression frequency (r = 0.58), whereas the 2024 recurrence rate showed only a modest link to QoL (r = 0.31). 55% of the participants avoided intercourse during outbreaks, 64% increased condom use after diagnosis, yet only 18% disclosed to all partners. HSV influenced 5 % of the 352 rated life-decisions: it mostly reduced social participation, while educational and career choices were rarely affected.

Conclusions: In this educated urban cohort, genital HSV exerts a moderate but heterogeneous QoL burden, caused mainly by perceived stigma and disclosure anxiety rather than by outbreak frequency or major life-course disruption. Dual-track management - suppressive antivirals plus structured counselling that normalises disclosure - could yield the greatest patient-reported benefit.

Right Ventricular-Pulmonary Artery Uncoupling in Patients with Heart Failure and Preserved Ejection Fraction: Clinical and Prognostic Correlations

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Introduction: Right ventricular − pulmonary artery (RVPA) uncoupling occurs when the increased pulmonary artery pressure (PAP) overcomes the right ventricular (RV) contractile force. The echocardiographically derived ratio between tricuspid annular plane systolic excursion (TAPSE) and systolic PAP (PASP) is a surrogate marker of RV-PA coupling (RVPAC) and has been independently correlated with mortality in heart failure (HF) with reduced ejection fraction (HFrEF). Limited data is available on its predictive value in HF with preserved ejection fraction (HFpEF).

Purpose: To assess the clinical and prognostic utility of TAPSE/PASP in HFpEF patients.

Methods: We evaluated adult patients with HFpEF consecutively admitted to our department between January 2019 and December 2020. We excluded cases with acute comorbidities, in-hospital death. All-cause mortality was documented after a mean follow-up of 4 years.

Results: We analyzed 121 HFpEF patients (mean age 72.21±9.68 years, 61.78% female). Long-term all-cause mortality was 29.26%. TAPSE/PASP was correlated with clinical congestion (AUC=0.772, p=0.009), dyspnea severity (AUC=0.668, p=0.006), atrial fibrillation (AUC=0.670, p=0.45), NT-proBNP (r=-0.53, p<0.001).

All-cause mortality was correlated with TAPSE/PASP (AUC=0.76, 95% CI 0.68−0.83, cut-off ≤0.46, p<0.001), PASP (AUC=0.77, 95% CI 0.69−0.84, cut-off >39 mmHg, p<0.001), TAPSE (AUC=0.64, 95% CI 0.55−0.72, cut-off≤16 mm, p=0.016), NT-proBNP (AUC 0.77, 95% CI 0.68−0.87, p<0.001). In multivariate analysis, TAPSE/PASP<0.46 mm/mmHg (HR=5.59, p<0.001) was an independent predictor of mortality, along with Log10NT-proBNP (HR=9.64, p=0.001) and malignancies (HR=13.27, p=0.004), outperforming PASP >39 mmHg and TAPSE ≤16 mm. The mortality prediction model including these parameters demonstrated an overall predictive power of 78%, with AUC=0.85 (95% CI 0.78−0.92, p<0.001).

Kaplan-Meier analysis showed significantly increased mortality and decreased survival time in patients with TAPSE/PASP<0.46mm/mmHg. **Conclusion:** RVPA uncoupling, quantified by TAPSE/PASP<0.46 mm/mmHg, was an independent predictor of all-cause mortality HFpEF patients, outperforming individual assessments of PASP and TAPSE in mortality risk stratification.

Profile of Oncology Patients Admitted to the Internal Medicine Clinic: Implications for Medical Practice

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The objective of the study was to evaluate the clinical and therapeutic profile of oncology patients admitted to the Internal Medicine Clinic of the Clinical Emergency Hospital of Bucharest.

Material and methods: We conducted a retrospective observational study based on discharge reports of 105 patients either previously known or newly diagnosed with different malignancies, hospitalized for acute conditions between May 2024 – January 2025. Data were extracted from the hospital's electronic system and analyzed descriptively.

Results: The average age of the patients was 73 years. Women represented 55% of the sample, with the most frequent cancer type being breast (44.64%), colorectal (16.07%), and lung (14.29%). Among men (45%), the most common were lung (32.56%), prostate (18.68%), and colorectal (18.68%) cancers. Most patients were in stage III (18.27%) or IV (49.04%) of cancer progression, and 16.19% were receiving palliative care. Histopathological information was available in 58 cases, with 89% being carcinomas. The most frequent comorbidities were cardiovascular (94.3%), respiratory (68.6%), and renal (60.9%). The average hospital stay was 11.83 days (median: 8). Common causes of admission included sepsis (41.9%), severe anemia (14.29%), and serositis (9.52%). Organ failure occurred in 80.95% of patients, with 4.76% experiencing multiple organ failure. The in-hospital mortality rate was 20%. According to the Pareto principle, the most impactful therapeutic interventions included complex antibiotic therapy, oxygen supplementation, hydro-electrolytic and acid-base rebalancing, anticoagulation, diuretic administration, and ventilatory support.

Conclusions: Oncology patients admitted to internal medicine departments present a particularly complex clinical profile. Their care requires multidisciplinary, integrative, and highly specialized therapeutic strategies.

The Hypertensive Patient Profile in the Emergency Department – an Integrative Approach to Risk Factors, Treatment, and Associated Complications

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Introduction & objectives: Arterial Hypertension (HTN) is one of the leading causes of cardiovascular morbidity and mortality worldwide, with an estimated prevalence of 30–50% among adults. In Romania, data from SEPHAR IV (2023) showed a prevalence of 46%, with higher values in men (50.8%) and in rural areas. HTN remains a major public health problem, with significant implications in acute pathology. The aim of this study was to evaluate the clinical and paraclinical characteristics of hypertensive patients presenting to the Emergency Department (ED), to define a risk profile and identify patterns of acute decompensation.

Materials and methods: We conducted a retrospective analysis of 161 patients diagnosed with HTN who presented to the ED over a six-month period with various complaints. Data collected included demographics, clinical and paraclinical findings, hypertension staging, cardiovascular risk factors, comorbidities, antihypertensive treatment history, and signs of hypertension-mediated target organ damage.

Results: Among the 161 patients (55.9% male, 44.1% female), the median age was 70 years (IQR: 63–76). Grade 3 hypertension was present in 53.4% of cases. Most patients (57.1%) were classified as very high cardiovascular risk. Statistically significant correlations were found between blood pressure values and biological parameters such as total cholesterol, LDL cholesterol, blood glucose, creatinine, urea, and C-reactive protein. These findings suggest a direct association between hypertensive imbalance and cardiovascular and renal dysfunction. Based on the collected data, we outlined a clinical and paraclinical profile of the hypertensive patient upon ED presentation.

Conclusions: The hypertensive patient presenting to the Emergency Department has a complex cardiovascular risk profile, often poorly controlled therapeutically. The data highlight the need for an integrated strategy for monitoring and early intervention, with an emphasis on the management of modifiable risk factors and increasing adherence to treatment in order to prevent acute organ damage.

Clinical and Etiopathogenic Aspects in Patients with Acute Non-Obstructive Pyelonephritis

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Objectives: Acute non-obstructive pyelonephritis (ANP) is a significant upper urinary tract infection, often requiring hospitalization and systemic treatment. This study aimed to analyze the relationship between clinical severity and laboratory parameters in hospitalized patients with ANP and to identify potential predictors of prolonged hospitalization or complications. A secondary objective was to explore the microbiological landscape of ANP, including antimicrobial resistance (AMR) patterns and their associations with demographic or clinical features.

Methodology: The study included adult patients admitted with confirmed ANP, in whom inflammatory markers, renal and hepatic function tests, and urinary sediment were assessed at admission.

Results: Inflammatory markers such as CRP, leukocyte count, and D-dimer showed consistent elevation, reflecting a systemic response. Urinalysis frequently confirmed active sediment with evidence of infection. Hepatic and renal parameters showed only mild changes in most cases.

Microbiological analysis identified a range of pathogens, with *Escherichia coli* as the predominant species. However, multi-drug resistant (MDR) strains were more commonly associated with certain species such as *Pseudomonas aeruginosa* and *Klebsiella pneumoniae*. Logistic regression analysis suggested male gender and elevated inflammatory markers as potential independent predictors of MDR infections.

All patients received targeted treatment according to clinical severity and microbiological data. The clinical course was favorable in most cases, highlighting the importance of early diagnosis and individualized antimicrobial therapy.

Conclusions: These findings support the need for a better understanding of host-pathogen interactions in ANP, and for a strategic approach to antimicrobial use, especially in patients at risk of MDR infections. Prophylactic and diagnostic protocols tailored to patient profiles may contribute to improved outcomes and reduced hospitalization burden.

Emergency Response Literacy in Romania: Are We Ready to Save a Life?

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Objectives: This study aimed to assess the level of knowledge and perceived preparedness among the general population in Romania regarding first aid interventions in four critical medical emergencies: cardiac arrest, epileptic seizure, road traffic trauma and severe burns.

Methods: A cross-sectional, questionnaire-based study was conducted using a structured survey comprising both theoretical questions and scenario-based practical assessments. The questionnaire was disseminated online and targeted a diverse demographic sample representative of the general adult population.

Results: The results revealed a statistically significant positive correlation between place of residence and the frequency of participation in first aid courses (p = 0.009), as well as between educational attainment and engagement in such courses (p < 0.01). Overall, 51.3% of participants reported having attended at least one first aid course during their lifetime. The main sources of first aid information were the internet (73.7%), formal first aid courses (53.3%) and specialized literature (books or articles) (28.3%). Regarding self-assessed preparedness to provide first aid, the lowest confidence levels were observed in the management of epileptic seizures, with 70.7% of respondents indicating that they felt not at all or only slightly prepared. Similarly, 54% reported feeling insufficiently prepared to respond to cardiac arrest, 55.7% in the case of burns and 54.1% for road traffic accidents. Notably, precisely due to this limited level of knowledge and self-perceived preparedness, over 95% of respondents strongly supported the integration of first aid training for these emergency scenarios into school curricula or workplace educational programs.

Conclusions: This investigation reveals pronounced deficits in the Romanian general population's theoretical comprehension and practical self-efficacy regarding essential first aid principles. The overwhelming public endorsement for formalized educational initiatives in this sphere underscores an imperative for national strategic frameworks. These frameworks must prioritize accessible, standardized training to enhance first aid literacy and preparedness across the population.

Post-Viral Immunosuppression as a Risk Factor for Invasive Fungal Sinusitis: A Case Study in a 16-Year-Old Patient

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Introduction: Immunocompromised patients are more susceptible to diseases such as Invasive Fungal Sinusitis (IFS), which has a mortality rate of up to 50%. In recent years, many people worldwide have been diagnosed with IFS, seemingly associated with prior or current Coronavirus-19 disease (COVID-19), reinforcing the idea that a suppressed immune system serves as a favorable environment for infections and fungal invasions.

Case presentation: A 16-year-old patient presented with left-sided nasal obstruction and anosmia for the past 3 months, unresponsive to treatment. The onset of symptoms coincides with a positive COVID-19 test. Approximately 3 months prior to the COVID test, the patient tested positive for Epstein–Barr virus, consistent with mononucleosis. This viral infection likely compromised the immune system, increasing vulnerability to opportunistic infections, including mycotic colonization. CT imaging revealed complete opacification and signs of chronic inflammation, including hyperdense areas suggestive of a fungal component, affecting the left cranial sinuses. Associated bone remodeling, predominantly osteolytic, involved the left frontal and maxillary sinuses. ENT examination showed a white-colored polypoid formation nearly obstructing the left nasal fossa, with septal crest contact on the right. Under general anesthesia, functional endoscopic sinus surgery was performed, including biopsy sampling and left maxillary antrostomy, with drainage of purulent, adherent, foul-smelling secretions. Laboratory results were positive for *Aspergillus* and non-pathogenic *Staphylococcus epidermidis*. Postoperative recovery was favorable under corticosteroids, antibiotics, and analgesics, and the patient was discharged with medical recommendations.

Conclusions: Opportunistic pathogens often affect individuals with acute or chronic immunosuppression, leading to potentially life-threatening conditions. Close monitoring of such patients is essential to identifying the causes of persistent symptoms and prevent complications.

The Impact of Neurological and Traumatic Comorbidities on Functional Rehabilitation in a Patient with Parkinson's Disease and Hip Fracture

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Introduction: Functional rehabilitation in elderly patients with degenerative neurological conditions and orthopedic comorbidities represents a major medical challenge, requiring a complex and personalized approach.

Case description: We present the case of an 83-year-old patient, suffering from Parkinson's Disease (PD) stage IV Hoehn&Yahr (H&Y), hypertension (HTA) and sequelae after a diaphyseal fracture of the right tibia with residual osteosynthesis material approximately 15 years ago, undocumented medically. Two months ago, the patient suffered an accidental fall from the same level, resulting in a right peritrochanteric fracture, and was operated on (22.02.2025) by Gamma rod-type centromedullary osteosynthesis. He was admitted to the rehabilitation departement complaining of balance disorders, gait impairment, decreased muscle strength predominantly in the right hip stabilizers, tremor in the upper limbs more pronounced on the right side and mechanical pain in the right hip VAS 4/10.

Discussions: The particularity of the case consists in the overlay of an acute orthopedic pathology on a chronic neurodegenerative picture, which led to an increase in gait disorders and the risk of falling. The patient followed a medical rehabilitation program lasting 12 days that included kinetotherapy with the objectives of toning the lower limb muscles, improving transfers, balance and gait, physiotherapy focused on stimulating the hypotrophied muscles and counseling to prevent relapses. The results were favorable, with improved mobility, increased functional autonomy and complete relief of the pain.

Conclusions: The case highlights the importance of multidisciplinary intervention in the rehabilitation of elderly patients with combined orthopedic and neurological conditions, emphasizing the need for a personalized rehabilitation program, adapted to the patient's comorbidities and exercise capacity.

Plasma Active Matrix Metalloproteinases, MMP1 And MMP9, Have Potential Implications on Left Atrial Function and Remodeling, in Patients with Coronary Artery Disease

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Background: Matrix metalloproteinases (MMPs), a family of proteolytic enzymes, are known to be involved in the regulation of turnover of extracellular matrix in cardiac tissue. Left atrial (LA) volume and function are an important predictor of mortality and morbidity after myocardial infarction. However, the impact of MMPs on structural atrial remodeling is not completely known.

Aim: To quantify the levels of MMP1 and MMP9, and to determine their association with left atrial volume, ejection fraction (EF), and global longitudinal strain (GLS) in patients with acute coronary syndromes (ACS) or chronic coronary syndromes (CCS).

Methods: 90 patients with coronary artery disease (61% men, 58+/-12 years), including 60 patients with ST-elevation acute myocardial infarction (STEMI), 30 patients with diabetes and 30 patients without diabetes, and 30 patients with CCS were assessed within 24 hours of admission by serum MMP-1 and MMP-9 analysis (ELISA kits). 2D echocardiography was used to assess LA volume and EF, and speckle tracking to asses GLS.

Results: Circulating levels of MMP1 and MMP9 were significantly increased in patients with STEMI vs. CCS (95%CI 1.92-8.43, p=0.002). In general group evaluation, MMP1 correlated with minimum LA volume (r=0.29, p=0.007) and with LA expansion index (r=-0.31, p=0.004), active LAEF (r=-0.41, p=0.0001), total LAEF (r=-0.31, p=0.003), and also with maximum negative LA strain (r=-0.21, p=0.04), while MMP 9 correlated with expansion index of LA (r=-0.25, p=0.01), active LAEF (r=-0.21, p=0.05), and total LAEF respectively (r=-0.24, p=0.02). In patients with STEMI and diabetes, MMP1 correlated positively with maximum and minimum LA volume (r=0.44 and r=0.43, respectively, both p=0.02), while in patients with STEMI without diabetes, MMP9 correlated negatively with passive LAEF (r=-0.44, p=0.01) and expansion index (r=-0.51, p=0.004). Both MMP1 and MMP 9 did not have any significant correlation with atrial function parameters in patients with CCS.

Conclusions: Circulating microRNAs and MMPs are promising biomarkers involved in atrial remodeling, directly affecting collagen metabolism changes, and are correlated with some of the most important parameters of atrial function and deformation in STEMI patients. However, further studies are needed to establish the influence of their expression on the progress of atrial structural remodeling and progression to atrial fibrillation.

Improving Patient's Experience in Stroke Rehabilitation through the Use of Digital Technologies - ROOMMATE Project

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The burden generated by central neurological conditions including stroke upon the healthcare systems as well as on the people's life is increasing. Solutions are required to reduce the direct and indirect costs of stroke rehabilitation but with improved outcomes. One strategy is to intensify the rehabilitation intervention programs.

Objective: To present the solution developed by rehabilitation experts from a multinational project team.

Method: Panel of experts and co-creation with stakeholders.

Results: To optimise rehabilitation outcomes, the project team decided for including in stroke rehabilitation programs a personalised intensive intervention based on gamified physical and cognitive rehabilitation interventions and health education interventions provided through easy-to-use digital technologies, during the waking hours when the patient is not undergoing the conventional sessions of the rehabilitation program. Under the monitoring of a personal coach, the patient learns to use a wide screen tablet installed at the bedside, to access physical exercise demos, stroke and stroke rehabilitation information and serious games.

Conclusion: Combining rehabilitation and technology experts input with information provided by stroke patients, their family and by multiprofessional teams in neurological rehabilitation, a potentially relevant addition to the rehabilitation program was developed, to intensify stroke rehabilitation for inpatients.

Improving Digital Skills in Ageing People Using an ICT-Based Solution – Preliminary Results of an Impact Study – AGAPE Project

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While society is ageing, the need for improving digital skills and literacy is increasing, as more and more activities are based on digital information communication technologies. Solutions are developed to provide easy access to the digital world for people from all age categories and all digital skills levels. AGAPE AAL project envisaged a solution aiming to respond to more needs of the older adults at the same time, by providing them with a wearable sensors-based lifestyle intervention, a coaching service and remote monitoring of the physical activity level and of the level of usage of the technologies provided. The coaches were trained to empower older adults to improve their level of innovation adoption as well as their social participation level.

Objective: To present preliminary results of the impact study of the complex ICT-based solution and service developed by AGAPE team.

Method: A 4 months long home-based study was conducted. The communication with the coach was done in person and remote.

Results: The coach-based multi-level intervention (theoretical and practical training regarding the benefits of the digital tools, lifestyle coaching and digital coaching) reduced the level of technostress of the study participants, improved their engagement with technology and the continuous interaction with the coaches reduced the level of perceived loneliness.

Conclusion: Trained coaches are a good asset when trying to improve digital technology skills and acceptance in older adults. The intensive interaction with technologies improves the attitude of the users, if the information provided by the technology is from the area of interest of the users.

Artificial Intelligence and Genomics in Healthcare: Insights from a Patient Survey

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Objectives: Artificial Intelligence (AI) is increasingly recognized as a transformative force in healthcare, influencing diagnostics, patient care, and clinical decision-making. Alongside the growing relevance of genomics, these developments highlight the importance of patient awareness. This study explores patient perspectives on the integration of AI in healthcare and the role of genomic data in diagnosis.

Materials and methods: An online survey was conducted via Google Forms between March 14 and March 30, 2025, targeting individuals aged 18 to 99. The questionnaire assessed participants' knowledge, attitudes, and concerns regarding AI in medical practice and the relevance of genomic testing.

Results: A total of 289 respondents completed the survey. While 71.4% reported awareness of AI in healthcare, their understanding was generally limited. A large proportion (82.9%) expressed confidence in physicians using AI-assisted diagnostics, although concerns were raised about potential errors and reduced human oversight. Regarding genomics, 72.1% reported limited knowledge. Over half indicated willingness to undergo genomic testing if recommended by a physician, with cost as the primary barrier. Many participants believed genetic test results could impact insurance eligibility and employment. However, most supported the use of anonymized genetic data for research. Notably, over 87% emphasized the need for better patient education on AI and genetic testing through accessible communication channels.

Conclusion: The findings reveal a generally open attitude among patients toward AI and genomics in healthcare, tempered by knowledge gaps and ethical concerns. While trust in AI-assisted care is high, apprehensions about data use and its implications persist. These results highlight the need for clear, accessible educational initiatives to improve patient understanding and engagement with emerging technologies. Promoting informed participation will be essential to ensure the responsible integration of AI and genomics into clinical practice.

The Challenges of Emergency Care for Oncological Patients: between the Medical Limit and the Dysfunctions of the Medical Health System

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Introduction & objectives: In the context of a healthcare system marked by the clear absence of palliative care and the fragmentation of the therapeutic pathway, the presentation of the oncological patient in the Emergency Department (ED) frequently raises complex clinical challenges and ethical tensions. Despite considerable investments in oncological treatments, the palliative care component remains deficient in Romania. Furthermore, an important need is represented by the regulation of the treatment of complications and the appropriate end-of-life care for the oncological patient.

Materials and methods: A critical synthesis of current practice and comparison with international models of integrated care of the oncological patient, with emphasis on defining the terminal case, considering the „Do Not Attempt Resuscitation" decision, and regulating palliation in the current medical system.

Results: The profile of a patient frequently found in the gray area of medical responsibility is outlined, managed at the border between specialties, in a system dominated by defensive medicine. The lack of proactive decisions and the absence of protocols to limit disproportionate interventions lead to prolonged suffering and the inefficient use of resources.

Conclusions: The presentation of a terminally ill oncological patient in the Emergency Department reflects not only a medical emergency, but also a systemic one. It is necessary to redefine the path of this patient by truly integrating palliative care, developing clear criteria for limited interventions, and recognizing the value of the decision of non-intervention.

Assessment of the Diagnostic Efficacy of Narrow Band Imaging (NBI) in the Detection of Laryngeal Cancer

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Narrow-band imaging (NBI) is an advanced endoscopic technology used to detect changes on the surface of laryngeal tissue. It employs a comparative approach alongside white-light endoscopy to facilitate histopathological examination.

To optimize the utility of narrow-band imaging (NBI) technology, a standardized classification system for vascular patterns seen under NBI, with a particular concentration on intraepithelial capillary loop (IPCL) patterns, is essential for accurate assessment of these lesions.

Therefore, NBI serves as an „optical biopsy", allowing to separate between malignant and benign lesions, leading to the early characterization of cases even prior to histopathological examination, which remains the gold standard for diagnosing laryngeal malignant lesions

Objective: To assess the utility and advantages of NBI in identifying malignant laryngeal lesions through a comparative analysis with histopathological examination.

Methods: We conducted a systematic literature review, utilizing databases such as PubMed, the CNKI database, and Embase to guide our research.

Results: We analyzed the articles by reviewing their titles and abstracts and selecting relevant ones based on predetermined criteria. In the final phase, we examined the relevant studies according to specific eligibility criteria.

Conclusion: Narrow-band imaging demonstrates its efficacy as a diagnostic tool for malignant laryngeal lesions compared to premalignant lesions. The European Society of Laryngology has implemented a standardized classification system for laryngeal lesions to enhance data correlation and organization.

Evolution of anti-SARS-CoV-2 Antibody Levels in Pandemic COVID-19 – a Romanian Experience

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Objective: Evaluation of the immune status during the first six months from infection with the SARS-CoV-2 virus by evaluating the IgM and IgG antibodies between Oct.-Dec. 2021 in COVID-19 patients.

Material and method: The study enrolled 108 unvaccinated COVID-19 patients who did not receive cortisone or various other therapies. All patients were tested for SARS-CoV-2 antibodies with rapid tests and the ELISA method. The control group (negative control) consisted of 12 people who had not experienced COVID-19 infection and had tested negative at the time of collection. The positive control group consisted of 3 vaccinated people. To interpret the results, we used a myCurvetFit computer program (https://mycurvefit.com).

Results: Recombinant Anti Human SARS-CoV-2 IgG Spike S1 + = 86. SARS-CoV-2 IgG anti-modified nucleocapsid protein += 57. In rapid testing, 69 people (41 with positive PCR test) had IgM = +, 31 = ++, while 39 simultaneously showed IgM with IgG, indicating infection in the acute phase of the disease/infection, including in asymptomatic individuals. 77 patients presented IgG, of which 11 = +, 14 = ++, 22 = +++, and the remaining 30 = ++++ (intensity above control).

Conclusion: Only vaccines can prevent a new epidemic or pandemic with this virus in the future. However, immunizing 80% of the population requires time until this threshold is reached, so finding complementary ways to keep the evolution of the pandemic under control and to prevent a possible re-emergence of the disease is recommended.

α1-Acid Glycoprotein as a Potential Biomarker for Severe Burns in Children

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Objective: Severe burns affect more than 25% of the total body surface area (TBSA) and are characterized by a systemic inflammatory response associated with a hypermetabolic state, being linked to septic complications that lead to prolonged hospitalization, multiple-organ failure, and an increased rate of mortality. The trauma of a major burn promotes the production of acute-phase proteins. In this context, the aim of the present study was to measure the levels of α 1-acid glycoprotein (AGP) in children with severe burns in three different moments: 48 h (T1), day 10 (T2), and day 21 (T3) post-burn.

Method: The observational cohort prospective study was performed on two groups: the study group represented by 32 children with severe burns and the control group consisting of 21 children without inflammatory systemic conditions or autoimmune health condition, local or systemic infection, oncologic condition, without hormonal, oncologic treatment, or immunosuppressive therapy. Blood samples were obtained from all participants to the study and were stored at −80 degrees Celsius. AGP levels were determined using the Multiplex technique.

Results: The results of the present study showed that AGP had significantly higher levels in children with severe burns compared to the control group (p=0.001). Moreover, the data obtained revealed that AGP levels increased at 48-hour post-burn and started to decrease from T1 to T2 and increased again at T3. Additionally, the results of the study show that there was a negative correlation between AGP levels and TBSA at 21-days post-burn, meaning that at T3 patients with lower TBSA were significantly more associated with high values for AGP.

Conclusions: The results of the study reveal the potential of AGP as a promising biomarker in monitoring patients with burns within the first 21 days.

Sentinel Surveillance of Healthcare-Associated Infections in a Pediatric Hospital in Bucharest, 2024

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Objectives: Sentinel surveillance of healthcare-associated infections (HAIs) in intensive care units (ICUs) and surgical wards, provides valuable data for specific intervention. The study aims to characterize the HAIs reported in a pediatric hospital in Bucharest in 2024.

Methods: This retrospective, descriptive study analyzed HAIs confirmed using national sentinel surveillance methodology. Descriptive analysis, performed with Epi Info and Excel, included demographic, clinical, and epidemiological variables.

Results: During the study, 75 HAIs were identified among 53 patients- 39 (73.58%) had one confirmed HAI, 11 (20.75%) had two HAIs. Three patients with prolonged hospitalization had 3, 5, and 6 HAIs, respectively.

Most patients were male (40, 53.33%), with a median age of 1 year and an interquartile range of 3 (0, 17). The median time to HAI onset was 22 days post-admission, and median hospital stay was 88 days. Most HAIs occurred in surgical wards (46, 61.33%).

HAIs in the ICU were 24 bloodstream infections (BSIs) (82.76%)- 5 in newborns; 4 pneumonias (13.79%), and a lower respiratory tract infection, determined mainly by *Klebsiella pneumoniae* (8, 26.7%), *Staphylococcus epidermidis* (7, 23.33%), and *Candida albicans* (4, 13.33%). Seven microorganisms (23.33%) presented multidrug resistance, versus 10 (18.87%) in the surgical wards.

In surgical wards, HAIs were 20 surgical site infections (SSI) (43.48%), 18 BSIs (39.13%), and 7 urinary tract infections (15.22%), and one pneumoniae, caused mainly by *Enterococcus faecalis* (13, 24.53%), *Candida albicans* (6, 11.32%), and *Klebsiella pneumoniae* (6, 11.32%). SSIs were superficial (4, 20%), deep (2, 10%), and organ infections (14, 70%).

Conclusions: BSIs were the predominant HAIs, underlying the system's role for early detection in high-risk wards. Sentinel surveillance revealed differences in the etiology and clinical characteristics of HAIs in the ICU and surgical wards, indicating the need to adapt interventions and guidelines.

Identification and Molecular Serogrouping of *Listeria monocytogenes* Strains Isolated from Romanian Patients

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Objectives: The group *Listeria* (*L.*) *sensu stricto* comprises seven Gram-positive bacterial species, out of which the most pathogenic is *L. monocytogenes*. This bacterium causes listeriosis, a foodborne zoonosis which can severely affect pregnant women, newborns, elderly, and immunocompromised population. In the last decade, there was a limited number of reports concerning the genetic diversity of *L. monocytogenes* strains from Romanian patients with listeriosis. In this study, we performed the identification and serogrouping of this pathogen, isolated from human clinical cases.

Methods: 33 bacterial strains found in samples of cerebrospinal fluid, blood or amniotic fluid were obtained between July 2021-May 2025 from different regions of Romania. For the phenotype identification, the strains were subjected to Gram staining, carbohydrates fermentation, catalase reaction, hemolysis, CAMP, and mobility examinations. Molecular identification of the isolates was performed by MALDI-TOF and real-time PCR. Serogrouping of *L. monocytogenes* isolates was based on the amplification of the *lmo0737*, *lmo1118*, *ORF2819*, *ORF2110*, *prs* genes by multiplex PCR. Using this approach, *L. monocytogenes* serotypes of public concern were clustered in four serogroups sharing common features and patterns of disease, as follows: IIa (1/2a, 3a), IIb (1/2b, 3b), IIc (1/2c, 3c), IVb (4b, 4d, 4e).

Results: All the 33 bacterial strains analyzed in this study by microbiological and biochemical methods presented the phenotypic characteristics of the bacterium *L. monocytogenes*. Additionally, all the isolates were specifically amplified by real-time PCR. Molecular analysis by multiplex PCR showed the occurrence of two serogroups, IIa and IVb, the latter being prevalent. This result is in line with the observation that the serotype 4b was previously associated with severe listeriosis cases and outbreaks.

Conclusion: The study provides an update on the distribution of *L. monocytogenes* serogroups among Romanian cases of listeriosis, for therapeutical and epidemiological purposes.

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Structural Modifications in the Brain of Rfx4_v3-Deficient Mice

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Objectives: Rfx4_v3 is a transcription factor responsible for critical functions in the developing central nervous system, such as the control of ciliogenesis and dorsal midline brain structures formation. To further explore the role of this transcription factor in the brain, we analyzed the Rfx4_v3 L298P transgenic mouse line (Zarbalis *et al.*, 2004), which resembles the Rfx4_v3 null phenotype.

Methods: The genotyping of Rfx4_v3 L298P mice was based on the „variable 3' end" method (Mitrecic *et al.*, 2008). Paraffin sections of relevant stages of the developing brain were analyzed by hematoxylin-eosin and immunofluorescence techniques. The structural predictions of both wild-type Rfx4_v3 L298 and mutant Rfx4_v3 P298 proteins were performed with ColabFold (Mirdita *et al.*, 2022).

Results: The heterozygous Rfx4_v3 L298P mice developed hydrocephalus after 21 days old. The rare homozygous juvenile mice exhibited hydrocephalus in the cerebral hemispheres, disorganized dorsal midline structures, underdeveloped midbrain, vermis, and absence of certain cerebellar lobules. The analysis performed in the developing brain of the heterozygous embryos showed no obvious phenotypic brain structure alterations. However, all the homozygous embryos tested (E12.5, E14.5, E15.5, E17.5) displayed an enlargement of the telencephalon at the expense of the mesencephalon and rhombencephalon. Moreover, several E12.5 homozygous embryos had hydrocephalus and showed a delay in the development of the fourth ventricle choroid plexus. At later stages, the homozygous embryos had an enlargement of the ventral and dorsal rhombomere 1 and underdeveloped fourth ventricle and choroid plexus. Both E12.5 and E15.5 homozygous embryos presented an ectopic expression of the dopaminergic neurons in the ventral rhombencephalon. Structural predictions of the mutant protein indicated a potential rigidity due to the amino acid P298 in the region which selects the dimerization partner of Rfx4_v3.

Conclusions: Rfx4_v3 requires the correct selection of a dimerization partner to regulate early brain patterning and dopaminergic neuron territory.

Evolution of Antibiotic Resistance in Escherichia Coli Strains Isolated from Biological samples: a Retrospective Analysis for the Period 2019-2023 in a Hospital Unit with Medical and Surgical Wards

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Objective: This study aimed to assess the dynamics of antibiotic resistance in *Escherichia coli* strains isolated from biological samples collected from patients admitted to medical and surgical wards between 2019 and 2023. The goal was to inform local policies on the rational use of antibiotics and to support the prevention of infections caused by multidrug-resistant bacteria.

Method: A total of 8319 biological samples were analyzed, of which 5860 (70.4%) were urine cultures. Bacterial identification and antibiotic susceptibility testing were performed using the Vitek 2 Compact automated system, employing AST-N204, AST-N222, and AST-P592 cards. Results were interpreted according to CLSI standards.

Results: A total of 2900 bacterial strains were identified, including 1204 (41.5%) *Escherichia coli* isolates. Resistance to Ampicillin remained consistently high throughout the five-year period (mean: 51.5%). Notable resistance rates were also recorded for Trimethoprim/Sulfamethoxazole (28.6%) and Ciprofloxacin (25.4%). The proportion of ESBL-producing strains ranged from 9% (2021) to 17.6% (2020), while multidrug resistance (MDR) was reported in an average of 17% of isolates. The year 2020 showed the highest rates of ESBL+ and MDR strains, most likely in the context of the COVID-19 pandemic.

Conclusions: The study highlights a persistent high level of antibiotic resistance in *E. coli*, with moderate variations over the analyzed period. The findings emphasize the ongoing need for active microbiological surveillance, regular updates to therapeutic guidelines, and strict antibiotic stewardship measures tailored to the local hospital context.

Gestational Antibiotic and Probiotic Exposure Impact on Post-partum Anxiety and Depressive Tendencies in Rodents

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Introduction: Chronic exposure to stressors during gestation has been linked to the development of depression and anxiety. These conditions may cause detrimental changes in maternal care with downstream consequences on offspring neurodevelopment. We employed a rodent model of gestational antibiotic administration to evaluate the behavioral outcomes associated with maternal microbiome disruption, and to investigate whether probiotics could serve as a protective intervention.

Materials and Methods: Our study involved 4 experimental groups. One group of pregnant rats received an antibiotic cocktail (ampicillin+vancomycin+neomycin+meropenem) daily (4 pm-8 am) starting with embryonic day (E) 11. Another group additionally received a multi-strain probiotic daily (8 am-4 pm). A third group received just the probiotic mix from E1 and a fourth, control group consisted in untreated rats. Maternal behavior was assessed using Forced Swim Test (FST) and Elevated Plus Maze (EPM).

Results: The antibiotic group was associated with diminished exploratory behavior in the EPM, indicating elevated anxiety-like behavior. In FST, the antibiotic group was less prone to climbing and swimming with increased time of immobility (p<0.05), exhibiting features of depressive-like behavior, compared to control. Co-administration of probiotics diminished these changes and was correlated with increased time spent in open arms in the EPM, suggesting attenuated anxiety and depressive-like responses.

Conclusions: These preliminary results support the hypothesis that probiotic supplementation during gestational antibiotic exposure may exert neuroprotective effects, partially mitigating behavioral manifestations of anxiety and depression in mothers. Further studies with different probiotics and additional tests for anxiety and depression-related behavioral changes should be explored.

Death in Two Acts: Acute Myocardial Infarction and Ruptured Aortic Aneurysm – Case Report

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Introduction: Abdominal aortic aneurysms represent a major cause of sudden death, particularly when rupture occurs in the setting of an undiagnosed systemic condition. While atherosclerosis is the predominant etiology, inflammatory or infectious forms – such as luetic aortitis – are rare and frequently underrecognized in current clinical practice, especially when other overlapping pathologies are present.

Methods: We present the case of a 53-year-old obese male patient, with no known cardiovascular history, who was brought to the hospital in cardiorespiratory arrest and diagnosed with an acute ST-segment elevation myocardial infarction (STEMI) in the infero-posterior territory. After approximately four hours, including prolonged resuscitation and transfer to a tertiary care facility, the patient died in the context of hemodynamic instability unresponsive to treatment.

Results: The medico-legal autopsy revealed chronic cardiovascular pathology (severe aorto-coronary atherosclerosis, left ventricular hypertrophy, diffuse myocardial fibrosis, and myocardial scarring), thrombosis of the right coronary artery, and a saccular infrarenal abdominal aortic aneurysm, ruptured retroperitoneally on the left side, with extensive hematoma. Histopathological examination confirmed the gross findings and additionally revealed morpho-pathological features consistent with chronic luetic meso- and periaortitis in the aneurysmal wall.

Correlation of clinical, paraclinical and pathological data suggests that the acute myocardial infarction was the initiating event, while the subsequent rupture of the aortic aneurysm was likely precipitated by prolonged resuscitation efforts and profound hemodynamic instability.

Conclusions: This case highlights the essential role of autopsy in clarifying the final mechanism of death in complex, multifactorial scenarios and underscores the importance of considering luetic aortitis as a rare but potentially fatal cause of abdominal aortic aneurysm.

Exopolysaccharides from *Rhizobium* Species as Biocompatible Carriers for Targeted Antitumor Drug Delivery: a Comprehensive Review

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Purpose: Efficient and targeted delivery of anti-cancer agents remains a critical challenge in oncology. Microbial exopolysaccharides (EPS), particularly those synthesized by *Rhizobium* species, have attracted increasing interest due to their biocompatibility, biodegradability, and structural versatility, making them suitable candidates for drug delivery systems. This review critically assesses recent advances in the application of *Rhizobium*-derived EPS as carriers for antitumor drugs, with a focus on their physico-chemical characteristics, drug-loading potential, and therapeutic performance.

Method: A systematic literature review was conducted using PubMed, ScienceDirect, and Web of Science databases, selecting studies that describe the extraction, structural and functional characterization, drug encapsulation strategies, release kinetics, and in vitro/in vivo antitumor efficacy of EPS-based delivery systems derived from Rhizobium species.

Results: EPS produced by *Rhizobium* spp. exhibit important properties for pharmaceutical use, such as high molecular weight, rheological flexibility, and reactive functional groups (e.g., hydroxyl, carboxyl, acetyl) suitable for chemical modification and drug conjugation. These polymers have been successfully used to encapsulate various chemotherapeutic agents, such as doxorubicin, paclitaxel, 5-fluorouracil, and cisplatin. The resulting nanocarriers or hydrogel matrices provide enhanced drug stability, sustained release profiles, improved cellular uptake, and targeted cytotoxicity against tumor cells. Preclinical studies report increased drug bioavailability, reduced systemic toxicity, and enhanced antitumor efficacy.

Conclusions: The unique structure and functional properties of *Rhizobium*-derived exopolysaccharides highlight their potential as promising carriers for the development of biocompatible and sustainable antitumor drug delivery systems. However, rigorous further studies are required to validate the safety and efficacy of these systems, which is essential for their clinical application.

The Cosmic Cord. Cardiovascular Changes in Microgravity Conditions and Their Clinical Implications

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Introduction: The cardiovascular system is among the most affected by exposure to microgravity. Fluid redistribution and cardiac readaptation lead to both acute and chronic hemodynamic changes, impacting astronauts' performance and health, while also offering potential terrestrial clinical applications.

Objectives: To investigate the cardiovascular response under simulated weightlessness conditions, to compare parameters between orthostatism and hypogravity, and to validate the R-FORCE BTL – Cardioscreen 1000 platform as an analogous method applicable to both space and clinical research.

Materials and methods: A total of 41 healthy volunteers (aged 20–35 years) were continuously monitored using the Cardioscreen 1000 system. Cardiovascular parameters (heart rate, cardiac output, stroke volume, pre-ejection and ventricular ejection periods, and blood pressure) were assessed at 13 successive time points corresponding to gravity reductions between 25% and 100%.

Results: Gravity reduction induced decreases in cardiac output and heart rate, accompanied by an increase in stroke volume, mainly due to prolonged ventricular ejection time. The variations were statistically significant ($p < 0.05$).

Conclusions: The R-FORCE platform represents a reliable, non-invasive, real-time microgravity analog, useful for both space research and medical applications. Potential directions include orthostatic rehabilitation, neuromotor recovery, as well as testing cardiac reserve in patients with heart failure, valvular disease, or post-myocardial infarction.

Peripartum Hysterectomy: a Life-Saving Procedure in Obstetric Emergencies

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Introduction: Peripartum hysterectomy is a life-saving, highly complex procedure employed in obstetric emergencies when conservative treatment is no longer effective. This case series highlights key clinical insights and challenges encountered in the management of peripartum hysterectomy.

Materials and methods: Our study was conducted over a period of 18 months at the Bucharest University Emergency Hospital, a level 3 maternity unit and a referral center for the management of highly complex obstetric cases. We present a series of 15 cases of peripartum hysterectomy, with our primary objectives being the analysis of clinical indications, management strategies, and outcomes.

Results: The incidence of peripartum hysterectomy in our cohort was 0.68%, which is considered relatively high compared to international data and may reflect the tertiary referral nature of our center. The median maternal age was 32 years, and 93.3% of patients delivered via cesarean section. Antenatal care was suboptimal, with only six patients followed from the first trimester. ICU admission was required in 73.3% of cases, with lengths of stay ranging from 1 to 7 days. Estimated blood loss ranged from 2.000 to 3.800 mL, with a median of 2.900 mL; only one patient did not require transfusion.

Conclusion: Despite the severity of these cases, all patients survived, with an average hospital stay of 10 days. The establishment of a multidisciplinary team, access to advanced diagnostic imaging, modern evidence-based surgical techniques, and high-quality intensive care services are key factors contributing to successful outcomes in the management of peripartum hysterectomy.

Investigation of Axial Measurement Indices from Computed Tomography, Magnetic Resonance Imaging, and Radiography in Assessing Extensor Apparatus Malalignment of the Knee

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Objectives: To evaluate the accuracy and reproducibility of axial measurements obtained through CT, MRI, and radiography in diagnosing and treating extensor apparatus malalignment of the knee, and to identify correlations between these measurements, surgical interventions, and functional outcomes.

Study design and methods: A prospective cohort study enrolled 60 patients aged 18–41 years with recurrent patellar instability, conducted between 2016 and 2022 at the Orthopedics and Traumatology Clinic, Bucharest. Ethical approvals and patient consents were obtained. Patients underwent preoperative and postoperative evaluations using radiographs, CT, and MRI. Functional scores (Kujala, Lysholm, Tegner) were recorded at three months post-surgery. Statistical analyses employed Mann-Whitney U, Wilcoxon, and Chi-square tests to assess correlations and significant differences.

Results: Patients demonstrated significant improvements in functional post-surgery scores, particularly in those under 30 years and with BMI <30. TT-TG measurements were higher on CT compared to MRI, reflecting superior precision of CT for axial parameters. Patients undergoing combined surgical interventions, including MPFL reconstruction and TT medialization, showed significantly better outcomes than those with isolated procedures. Radiographic measurements, while less precise than CT or MRI, provided valuable preliminary diagnostic insights. The study faced limitations regarding conventional metrics such as TT-TG in cases with concurrent trochlear dysplasia, suggesting a need for refined assessment protocols regarding complex anatomical variations.

Conclusions: Axial measurements using CT and MRI are indispensable for accurate diagnosis and individualized treatment planning in patellar instability. Radiography remains a cost-effective initial tool. Surgical success is enhanced through combined approaches addressing both soft tissue and bony anomalies. Future research should focus on refining imaging metrics and establishing precise surgical indications for borderline cases.

Genomic Determinants of Knee Joint Biomechanics: Translating Molecular Insights into Injury Risk Assessment and Osteoarthritis Prevention

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Objectives: To clarify how genetic variation shapes knee joint biomechanics, we systematically examined molecular determinants, particularly collagen-related and osteoarthritis (OA)–susceptibility genes, that modulate ligament elasticity, meniscal resilience and cartilage integrity, with the aim of informing risk stratification, injury prevention and personalised rehabilitation strategies.

Materials and methods: A narrative review was performed. PubMed was searched (keywords: „knee biomechanics", „meniscus degeneration", „genetics of osteoarthritis", „collagen genes", „extracellular matrix", „proteoglycans"). From 487 initial records, 136 articles met predefined relevance criteria. Data extraction focused on study design, genotype-phenotype associations and mechanistic insights across musculoskeletal tissues.

Results: Collagen genes emerged as key biomechanical modulators. The COL1A1 Sp1 variant influenced anterior cruciate ligament (ACL) rupture risk, while COL5A1 BstUI CC genotype conferred protection, particularly in females; COL11A1 variants were linked to altered fibrillogenesis and early-onset OA. Meniscal tears showed age- and injury-specific gene signatures, with young patients and combined ACL lesions exhibiting higher IL-1β, TNF-α and MMP-13 expression, indicating a catabolic joint milieu. Genome-wide studies identified GDF5 rs143383, ALDH1A2 rs4238326 and MATN3 mutations among loci predisposing to knee OA, highlighting pathways in chondrogenesis, extracellular matrix homeostasis and epigenetic regulation. Collectively, these findings underscore that genetic architecture intersects with mechanical loading to dictate tissue robustness, injury susceptibility and degenerative trajectories.

Conclusions: Genomic determinants critically influence knee structure – function relationships, offering biomarkers for predicting soft-tissue injury and OA progression. Integrating genotyping with biomechanical assessment can guide targeted prevention, individualized rehabilitation and the development of gene-informed disease-modifying therapies. While population heterogeneity and complex gene – environment interactions remain challenges, this synthesis advances the translation of molecular insights into precision orthopaedics.

Surgical Treatment of Burns Using the Meek Micrografting Technique

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Introduction: Burn injuries, particularly in pediatric patients, remain a major clinical challenge. For extensive burns (over 30% TBSA) or full-thickness injuries, spontaneous healing is not possible due to the complete destruction of re-epithelialization resources. The Meek micrografting technique, allowing wider expansion rates, offers a reliable alternative for covering large burn areas when autograft donor sites are limited.

Materials and methods: We performed retrospective research that included pediatric burn patients treated surgically using the Meek micrografting technique. All patients admitted for burn injuries without surgical treatment or those who benefit from other grafting techniques were excluded. The study group was identified by accessing the hospital's electronic database, as well as archived patient charts and surgical protocol registers. We analyzed the selected cases in terms of patient demographics, total burn surface area (TBSA), etiology and depth of injury, number of surgical interventions including revisional procedures, and length of hospital stay (LOS).

Results: Between December 2019 and December 2023, we retrieved 38 patients (aged 0–18) meeting the inclusion criteria. The surgical protocol included Meek micrografting technique as a singular or combined grafting method; in 71% of cases, Meek was used as primary surgical approach. The most common burn etiology was flame (especially in patients aged 12 years and older) and the mean burn surface was 58% TBSA (range: 20%-95%). LOS was not influenced using this technique, being correlated only with burn severity (etiology, TBSA, depth, comorbidities).

Conclusions: Meek micrografting is an efficient and safe technique for pediatric patients with large burn areas and limited skin donor sites. It allows for high expansion ratios (up to 1:9), reduced scarring, and good functional outcomes. The method has proven reliable even in burns involving only 20% TBSA, making it a viable option even beyond traditionally recommended cases.

Orbital Solitary Fibrous Tumor: A Rare Entity with Surgical Challenges – Case Report

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Introduction: Solitary fibrous tumors are rare masses with orbital development, representing less than 5% of these tumors. They are generally found to be slow-growing and well-circumscribed. The histopathological hallmark of solitary fibrous tumors includes a „pattern less" architecture with alternating hypercellular and hypocellular areas. On immunohistochemistry, these tumors are CD34 and STAT6 positive.

Materials and methods: This paper aims to present the case of a 42-year-old female patient admitted with complaints of epiphora, chemosis, and blurred vision in the left eye. MRI revealed a well-defined, round-oval heterogeneous lesion (20 × 22 mm) in the inferomedial extraconal left orbit, compressing the ocular globe and adjacent muscles. The patient underwent tumor resection via a transnasal endoscopic approach under general anesthesia. The procedure included the removal of concha bullosa, medial maxillectomy, anterior-posterior ethmoidectomy, excision of the lamina papyracea, and a transconjunctival incision at the medial angle of the left eye. The tumor was carefully mobilized and successfully removed endonasally.

Results and discussions: The postoperative course was favorable, with minimal bleeding and spontaneous hemostasis following nasal packing removal at 48 hours. Diplopia resolved during recovery, and the patient was discharged in good general condition.

Conclusions: Endoscopic surgical management of orbital tumors extending into the nasal cavity allows precise resection with minimal invasiveness. This approach facilitates excellent visualization and tissue preservation, reducing morbidity compared to traditional open techniques.

Bladder Cancer Diagnosis and Monitoring by mRNA

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Introduction: According to the latest data available from the Global Cancer Observatory (GLOBOCAN) for 2022, 5.157 new cases of bladder cancer were registered in Romania in that year. Statistics consistently show that the incidence is approximately 4 times higher in men. Standard diagnostic methods such as cystoscopy and urinary cytology are either invasive or have low sensitivity. The development of non-invasive and accurate diagnostic tests is essential for improving diagnosis and monitoring.

Aim: This study evaluated the performance of mRNA-based urine tests, Xpert Bladder Cancer Detection and Xpert Bladder Cancer Monitor, for screening patients with hematuria and, respectively, for monitoring recurrences in patients with a history of bladder cancer.

Patients and methods: Urine samples for mRNA extraction were collected from a group of symptomatic patients (for screening) and a group of patients previously diagnosed with bladder cancer of various grades (for monitoring). mRNA was extracted and analyzed by RT-qPCR using the Xpert kits, which measure the expression of a panel of five genetic biomarkers (ABL1, CRH, IGF2, UPK1B, ANXA10). An algorithm calculated a risk score for the presence of cancer.

Results: There was excellent correspondence between mRNA testing results and pathological examinations. The testing demonstrated a very high negative predictive value (NPV) (>95%), with a negative result accurately ruling out the presence of disease. All positive and negative results correlated with the biopsy.

Conclusions: The Xpert mRNA testing from urine is a non-invasive alternative to cystoscopy, reducing the need for unnecessary invasive procedures due to its high negative predictive value. This improves patient quality of life and supports precision medicine in oncological urology.

PRECLINICAL SPECIALTIES

Efficacy of Modern Versus Classic Training on Hand Hygiene Compliance: a Pre-Post Interventional Study in a Tertiary Hospital in Bucharest

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Introduction: Healthcare-associated infections remain a significant cause of mortality, with hand hygiene (HH) being the most effective preventive measure. This study assessed whether a modern training program obtains increased HH compliance compared to a traditional program in a tertiary hospital.

Objectives: The objective was to compare the effectiveness of a modern training program versus a traditional training program on improving HH compliance among healthcare workers.

Methods: An experimental, pre-post intervention study, was conducted in two wards (adult and neonatal ICU). The compliance was measured with the WHO checklist of the 5 moments of HH. ICU received a classic lecture-based training. NICU received a modern training program incorporating interactive videos, practical demonstrations and feedback. HH compliance was observed during a 4-week period before and after the interventions. Data were analysed using EpiInfo to assess the association between training type and the pre-post training compliance.

Results: ICU had 236 HH moments observed and NICU 119. Compliance, pre-intervention, was 39.0% for ICU and 47.9 for NICU (p = 0.200). Post-intervention, compliance increased by 9.8% (χ^2=2.113, p=0.146) for ICU and 19.5% (χ^2= 4.320, p=0.038) for NICU. Binary logistic regression revealed that being in the modern training ward (NICU) was associated with higher odds of compliance compared to the traditional training ward (ICU), (OR=1.62, 95% CI: 1.01-2.60, p=0.045). The post-training period was associated with higher compliance compared to the pre-training period (OR=1.82, 95% CI: 1.16-2.86, p=0.010). Regarding healthcare professional categories, nurses demonstrated higher odds of compliance compared to doctors (OR=1.77, 95% CI: 1.06-2.94, p=0.029), while no significant difference was found between auxiliary staff and doctors.

Conclusions: While any form of training is beneficial, a modern educational program is more effective at improving hand hygiene compliance than a traditional, lecture-based approach. To achieve long-lasting improvements in patient safety, healthcare institutions should prioritize the implementation of modern training methods for hand hygiene.

The Influence of *IL-8* Gene Polymorphisms on the Risk of Ulcerative Colitis in Romanian Patients

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Objective: Interleukin-8 (IL-8), also known as CXCL-8, plays a crucial role in inflammation, especially due to its properties of prolonged persistence and early-stage secretion during the inflammatory response. Elevated levels of IL-8 are frequently observed in patients with ulcerative colitis (UC), contributing to the recruitment and activation of neutrophils in the inflamed intestinal mucosa. Among the single nucleotide polymorphisms (SNPs) identified within the *IL-8* gene, the promoter SNP rs4073 (-251T/A) can affect the binding sites of transcription factors, which influences serum and tissue levels of IL-8. rs2227306 (+781C/T, first intron) has been shown to enhance transcription and to influence gene regulation.

This study aimed to investigate the association between *IL-8* gene variation and susceptibility to UC in a group of Romanian patients.

Methods: We evaluated 83 patients with ulcerative colitis (51M/32F) and 135 healthy controls (73M/62F), all unrelated and of Romanian ethnicity. UC patients and controls were genotyped for *IL-8* gene SNPs rs4073 and rs2227306 using TaqMan Allelic Discrimination Assays on a Real-Time PCR System (Thermo Fisher Scientific, USA). Association tests were performed with OpenEpi online software and Plink v1.07.

Results: Significant differences were observed in relation with the risk of the disease for both SNPs. For rs2227306, the frequency of the minor allele (T) was significantly lower in CU patients compared with controls (30.7% vs 41.5%, p=0.02, OR 0.62, 95%CI 0.41-0.94). Genotypes analyses revealed that the carriers for the minor alleles for the two SNPs (TA/AA and CT/TT, respectively) have a significant lower risk for the disease (p=0.009, OR 0.46 and p=0.01, OR 0.5).

The most frequent haplotype (rs4073/rs2227306 TC) was associated with a high risk for developing UC (63.8% in patients vs 53.2% in controls, p=0.02).

Conclusion: We found significant associations of the investigated SNPs with disease susceptibility. The results need confirmation on larger cohorts of patients.

Impact of RS1761667 Polymorphism on *CD36* Gene Expression in Bladder Tumors

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Background: Bladder cancer (BCa) is the most frequent cancer of the urinary system and one of the most common malignancies worldwide. CD36, a multifunctional scavenger receptor, is expressed at high levels in various tumour types, and its expression correlates with advanced stages, poor prognosis, and reduced survival. The study aimed to investigate the genotypic and allelic distribution of the single-nucleotide polymorphism rs1761667 and its association with *CD36* gene expression in BCa. Understanding how this polymorphism affects *CD36* expression in humans may offer insights into its role in disease.

Materials and methods: 56 blood samples were analyzed, comprising 36 specimens from patients diagnosed with BCa and 20 control samples from healthy individuals. Genotypes of CD36-rs1761667 polymorphism were determined on genomic DNA by the polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) method. CD36mRNA expression levels were assessed by quantitative real-time reverse-transcription PCR (SYBR Green dye) of RNA extracted. Using GAPDH as the normalization reference gene, the $2^{-\Delta\Delta CT}$ technique assessed relative gene expression.

Results: PCR_RFLP analysis confirmed the existence of three genotypes for rs1761667 (GG, AG, and AA). The expression of CD36mRNA was analysed according to genotype and study group (Patients/Controls). A significant difference in CD36mRNA expression was observed between genotypes in the patient group (p = 0.013, Kruskal-Wallis test). Significant pairwise differences were observed for AA vs GG (p = 0.0097) and GA vs GG (p = 0.036). The AA genotype was associated with lower expression levels, while the GA and GG genotypes showed higher expression.

Conclusions: Our results demonstrate that the rs176667 polymorphism significantly influences CD36mRNA expression in BCa patients. Given the role of CD36 in tumor progression, angiogenesis, and metastasis, this finding suggests that genetic variability at rs176667 may contribute to interindividual differences in tumor behavior and could represent a potential molecular biomarker for BCa patient stratification and prognosis.

Association between *IL-13* Gene Polymorphisms and Non-IgE Mediated Food Allergy in Children

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Objectives: Non-IgE mediated food allergies are showing an increased prevalence in the pediatric population during recent years. In these patients, elevated levels of IL-13 were reported, and several associations were described between *IL-13* genetic polymorphisms and food allergy, atopic dermatitis, asthma, and allergic rhinitis. This study aimed to investigate the correlations between non-IgE mediated food allergies and two single nucleotide polymorphisms (SNPs) found in the *IL-13* gene.

Method: The patients group included 80 Romanian children (31/49 M/F) with non-IgE mediated food allergies from Marie Curie Emergency Children's Hospital, diagnosed based on the presence of suggestive symptomatology and a positive response to the elimination diet. A number of 115 Romanian individuals (52/63 M/F) without food allergy formed the control group. Genomic DNA extracted with QIAamp DNA Blood Mini Kit was used for genotyping of the two selected SNPs, rs20541 and rs1800925 (Real-Time PCR with TaqMan Allelic Discrimination Assays from Thermo Fisher Scientific). The statistical significance of the association was assessed using the OpenEpi software and PLINK v1.07.

Results: The distribution of the genotypes for rs1800925 showed a significant difference between patients and controls, the carriers of the minor allele (CT+TT) being more frequent in patients (50% vs 35.6%, p=0.04, OR 1.80). The heterozygotes subjects were at high risk for the disease comparing with individuals with CC genotype (p=0.01, OR 2.07). Linkage disequilibrium between the two investigated SNPs was low (r^2=0.2). Haplotype analysis showed no significant differences between controls and patients. No other associations were found in the studied group.

Conclusions: The presence of the minor allele T of rs1800925 in *IL-13* gene was associated with an increased susceptibility for non-IgE mediated food allergy.

Prenatal Microbiome Perturbation and Offspring Brain Outcomes: Interplay between Antibiotics, Probiotics, and Perinatal Asphyxia

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Introduction: Disruption of the maternal gut microbiome during pregnancy is increasingly involved in adverse neurodevelopmental outcomes in offspring, particularly in the context of perinatal brain injuries such as perinatal asphyxia (PA). Prenatal antibiotic administration significantly alters the maternal gut microbiota, potentially heightening offspring susceptibility to neurodevelopmental impairments. This study explores how antibiotic-induced microbiome dysbiosis during pregnancy affects the offspring neurodevelopment, and whether probiotic supplementation can confer neuroprotection, particularly in the context of PA.

Methods: Pregnant Wistar rats were allocated to four groups: control, antibiotic-treated (ampicillin 1 mg/mL, vancomycin 0.5 mg/mL, neomycin 5 mg/mL, meropenem 1 mg/mL starting embryonic day [E]11), probiotic-treated (multi-strain probiotic throughout gestation), and a combined antibiotic+probiotic group. Fecal microbiota was analyzed at E20. On postnatal day 6 (P6), pups were exposed to PA or maintained under normoxic conditions, yielding eight experimental groups. Early-life sensorimotor development (righting reflex, negative geotaxis, grip strength) was assessed between P7–P9. From P35, a subset of male and female offspring underwent evaluation of cognitive performance (Barnes Maze, Y-Maze Spontaneous Alternation, Novel Object Recognition) and depressive-like behavior (Forced Swim Test).

Results: Antibiotic treatment significantly reduced beneficial microbial taxa (e.g., *Bifidobacterium, Faecalibacterium, Bacteroides, Butyricicoccus*) and increased potentially pathogenic species (e.g., *Fusobacterium*). Offspring exposed to prenatal antibiotics exhibited impaired sensorimotor reflexes and cognitive deficits, both of which were aggravated by PA. While probiotic co-administration failed to fully reverse the effects of antibiotic exposure, it provided partial mitigation of PA-associated behavioral impairments.

Conclusion: Gestational antibiotic exposure disrupts maternal microbiota and exacerbates offspring neurodevelopmental deficits, particularly when compounded by PA. Probiotic supplementation showed limited protective effects, suggesting a need for more targeted strategies to preserve neurodevelopment in the context of prenatal microbial disruption. These findings underscore the critical role of the maternal microbiome in shaping offspring brain development and resilience to early-life insults.

Gestational Antibiotic Administration Increases the Severity of Hypoxic-Ischemic Brain Injury in Rat Offspring

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Antibiotic use during gestation is essential for treating infections. Nevertheless, the antibiotic-induced disruption in the maternal gut microbiota has been associated with various adverse long-term health outcomes in children. We investigated the effect of antibiotic exposure during gestation, on the outcome of perinatal asphyxia (PA), a severe birth complication.

Pregnant Wistar rats were treated from gestation day 11 to term with antibiotics (AB), antibiotics combined with probiotics (AB-P) or probiotics alone (P). All pups underwent a standardized experimental PA protocol after birth (P6). We assessed the extent of the Hypoxic-Ischemic Brain Injury (HIBI) by the EEG reactivity to photic stimulation after 10 weeks.

Burst-suppression EEG patterns were induced by deep sedation with chloral hydrate. For each rat, we recorded multiple trials consisting of 1 minute of photic stimulation (0.5 Hz) interleaved with a 1-minute recovery period. The EEG bursts were manually counted. A burst count reactivity index (BCRi) was derived as the increase in burst count during stimulation, relative to baseline burst count.

When compared to the P group (Mann-Whitney U), the AB group showed a decreased BCRi ($U = 1.00$, $p = 0.003$), whereas the BCRi remained unchanged in the AB+P group ($U = 20.50$, $p = 0.654$). These data suggest that antibiotic exposure during gestation increased the severity of HIBI via microbiome disruption. The coadministration of probiotics could emerge as a clinical strategy to counteract the detrimental effect of antibiotic treatment during pregnancy.

PHARMACY

Integration of Artificial Intelligence in Drug Development and Preclinical Research. A Literature Review

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Aim: There is still a significant gap in the implementation of artificial intelligence in pharmaceutical research and preclinical drug development. Therefore, given the huge potential of machine learning algorithms in extracting relevant information from health data, the aim of the current study was to highlight the most relevant aspects regarding the efficient use of artificial intelligence in drug discovery and in reducing the number of animals in preclinical trials.

Methods: Based on the available information from several international databases, such as PubMed, ScienceDirect and Cochrane, as well as the official online resources coordinated by the Food and Drug Administration and European Medicines Agency, a review was undertaken. The search query included terms like „drug development", „preclinical studies", „machine learning" and „artificial intelligence".

Results: Both supervised and unsupervised machine learning methods were identified as being relevant for drug development and preclinical research. Neural networks, Support Vector Machines, K-Nearest Neighbors and Random Forest were commonly used algorithms, while platforms such as OpenTargets, PreADMET and databases such as PharmGKB, PubChem and DrugBank are valuable online tools in assisting such research tasks. Implementing these models can effectively reduce costs and increase predictive accuracy of human behaviors.

Conclusions: Machine learning methods have proven to be a valuable tool in drug development and preclinical research. Future studies must aim in optimizing such models for an enhanced implementation in replacing traditional experimental methods.

Optimization Study of Schiff Bases Synthesis Starting from Sulfonamides Using Microwave Irradiation

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Objectives: Sulfonamide Schiff bases have shown potential as biologically active scaffolds, alone or as ligands in metal complexes. Applications include antimicrobial effects, anticancer effect and enzyme inhibition (carbonic anhydrase IX and XII, urease, cyclooxygenase-1). The most common synthetic methodology involves direct condensation of sulfonamides with different aromatic aldehydes, in alcohol medium under conventional heating for several hours. In addition, green methods (microwave irradiation, sonication) have been developed, resulting in satisfactory yields and significant reduced reaction time compared with conventional methods. Thus, we developed a microwave assisted synthesis of sulfonamide Schiff bases based on previous techniques and successfully applied for a series of sulfanilamide derivatives. The present study aimed to optimise this protocol for the synthesis of sulfadiazine derivatives.

Methods: The reactions were performed using Biotage® Initiator Classic 2.0 (Biotage, Uppsala, Sweden). The starting protocol used alcohol media (methanol, ethanol) and glacial acetic acid as catalyst. Because of the low solubility of sulfadiazine in alcohols, dimethylformamide (DMF) was considered as alternative reaction medium. Potassium hydroxide and ferric chloride were also tried as catalyst. Reaction parameters (time, temperature, solvent, catalyst and absorption level) were varied. The progress of the reaction was monitored by TLC.

Results: In alcoholic media, the best results were obtained using ethanol and glacial acetic acid, irradiating the vial at 100ºC, at high absorption level for 40 minutes. Comparable yields were obtained with DMF and ferric chloride, irradiating the mixture at 160ºC for 30 minutes at normal absorption level. Changing the catalyst to potassium hydroxide showed no improvement.

Conclusion: The results of this study highlight that microwave assisted synthesis is worth to be considered in the process of obtaining sulfonamides Schiff bases derivatives.

Palladium(II) Complexes with 4-Aminoantipyrine Derived Schiff Bases - Structural Characterization and Biological Evaluation

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Objectives: Schiff bases are versatile compounds with wide applications due to their structural stability, easy synthesis, and significant biological activity. Coordination with palladium(II) enhances their pharmacological properties, including antioxidant, antibacterial, and anticancer effects. This research represents a continuation of the team's previous investigations, where palladium complexes with ligands derived from 4-aminoantipyrine were synthesized, characterized using elemental analysis, IR, ^{1}H, ^{13}C NMR, UV-Vis spectroscopy, and toxicologically evaluated on *Triticum aestivum* and *Artemia franciscana* Kellogg species.
In the present work, these complexes have been further characterized by X-ray diffraction analysis and were evaluated for their interactions with BSA and DNA, along with their antioxidant effects.

Method: The Schiff bases were obtained by reacting equimolar amounts of aromatic aldehydes and 4-aminoantipyrine in ethanol under reflux. The resulting ligands were subsequently used to form palladium complexes through reaction with Pd(OAc)$_2$. To confirm the molecular structures, X-ray diffraction analysis was performed on the synthesized compounds. Fluorescence quenching studies and synchronous spectra were employed to investigate the interactions of metal complexes with CT-DNA and BSA protein. For the assessment of the antioxidant effect, we used DPPH and ABTS radical scavenging assays.

Results: Crystallographic data confirmed a centrosymmetric molecular structure for the palladium complexes, with the Pd(II) atom positioned on the inversion center. The metal center is coordinated by two deprotonated organic ligands through N$_2$O$_2$ set of donor atoms, adopting a square planar geometry and maintaining charge balance consistent with the general formula [Pd(Lx)$_2$].

The metal complexes showed intercalative binding to DNA and interaction with BSA. Moreover, they exhibited antioxidant activity comparable to that of the ligands.

Conclusions: This study confirms that both the structural diversity of Schiff bases and their coordination with Pd^{2+} influence biological activity of the newly formed complexes, encouraging further research in the field of bioinorganic chemistry.

DENTAL MEDICINE

Differential Effects of Apigenin on Normal and Malignant Gingival Epithelial Cells: Implications for Oral Squamous Cell Carcinoma Therapy

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Objectives: This study aimed to evaluate the effects of apigenin on cell viability, cytotoxicity, apoptosis, inflammation, and autophagy in two cell types: normal human gingival epithelial cells and oral squamous carcinoma cells. We sought to determine whether apigenin selectively affects malignant cells and to explore its potential as an adjuvant therapy for oral squamous cell carcinoma.

Methods: Normal human gingival epithelial cells (Innoprot, REF: P10864) and OECM-1 oral squamous carcinoma cells (Merck, Cat: SCC180) were exposed to apigenin at two concentrations (50 µM and 150 µM) for 24 and 48 hours. Untreated cells served as controls. Cell viability was assessed using the MTT assay, and cytotoxicity and inflammation were measured by LDH and nitric oxide quantification. Apoptotic markers (Bad, JNK, Bcl-2, AKT, p53, caspase-8, caspase-9) were evaluated using a multiplex Luminex 200 system. Autophagy (LC3) and late-stage apoptosis (caspase-3/7) were analysed through fluorescence microscopy.

Results: Apigenin exhibited a time- and dose-dependent effect on both cell lines. After 24 hours, cell proliferation slightly increased, but a marked reduction in viability was observed at 48 hours, especially in cancer cells (−32% viability at 150 µM). In normal cells, apigenin induced classical apoptosis via AKT downregulation and caspase activation. In contrast, tumour cells showed resistance at 150 µM due to increased anti-apoptotic proteins (AKT, Bcl-2), although 50 µM induced a 50% increase in caspase-8, suggesting partial apoptotic activation. Autophagy was suppressed in tumour cells but activated in normal cells, indicating a survival mechanism.

Conclusions: Apigenin affects normal and malignant oral epithelial cells differently, promoting apoptosis and reducing viability more effectively in tumor cells. These findings highlight its concentration- and time-dependent action and support further investigation of apigenin as a potential adjuvant in oral cancer therapy.

Multidisciplinary Development of an Intelligent Dental Education Simulator Using Embedded Microsensors

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Objectives: The study aims to design and develop a high-fidelity dental education simulator that closely replicates the clinical environment through the integration of advanced sensor technologies. The intelligent simulation model has microsensors embedded directly to monitor and analyze key physiological and procedural parameters, including temperature variations and intraoperative pressure applied to the dental surfaces during clinical maneuvers and therapeutic interventions.

Method: A mandibular segment of a dental simulator was fabricated using high-resolution 3D printing technology to allow the integration of microsensor systems. Temperature sensors were implemented within the 3D-printed mandibular structure, positioned to enable the detection of thermal variations during simulated clinical conditions. These sensors were selected based on their compact dimensions, responsiveness, and compatibility. In parallel, a separate set of pressure sensors was used to investigate the feasibility of force detection in artificial teeth during practice.

Results: The development process resulted in an innovative dental simulator featuring integrated microsensors. The model demonstrated reliable responsiveness to temperature variations under simulated clinical conditions, confirming the feasibility of monitoring thermal dynamics in real time. The anatomical fidelity of the design, including sensor wiring routed through the mandibular canal, contributed to both functional performance and structural realism. Preliminary investigations into pressure sensor performance were conducted independently from the simulator component parts. These tests confirmed the sensors' capacity to detect

and quantify force variations across a range of applied loads, suggesting their potential utility for future integration.

Conclusions: The resulting prototype represents an inovative, sensor-enhanced simulation that successfully captures temperature and tactile feedback and establishes the foundation for comprehensive biomechanical monitoring. The developed sensor-integrated phantom model is designed to support dental students in improving their clinical skills by simulating realistic intraoral conditions with high precision.

MEDICAL SPECIALITIES

Genetics Behind a Cardiac Arrest in a Young Patient – a Case Report

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Objectives: Desmoplakin (DSP) is a structural protein in cardiac desmosomes, essential for mechanical integrity and cohesion in myocardial tissue. Mutations in the DSP gene cause arrhythmogenic cardiomyopathy (ACM), marked by ventricular arrhythmias, fibrofatty myocardial replacement, and increased risk of sudden cardiac death (SCD). Unlike classical ACM, which predominantly affects the right ventricle, DSP mutations often result in left-dominant or biventricular disease.

Methods: We present the case of a 39-year-old woman who experienced a cardiac arrest caused by ventricular fibrillation. She received an implantable cardioverter-defibrillator (ICD) for secondary prevention of SCD. Coronary artery disease was excluded. Two years later, she presented a syncope related to sustained ventricular tachycardia (SVT), which was terminated by ICD intervention.

Results: ECG showed low QRS voltage and negative T-waves in leads V2–V6. Echocardiography revealed normal left ventricle (LV) dimension with ejection fraction of 48% and longitudinal systolic dysfunction. Cardiac MRI showed mild LV dysfunction and subepicardial LGE with ring-like pattern. Genetic testing identified a pathogenic *DSP* variant (p.Arg150*). She is on metoprolol 25 mg daily and avoids high-intensity physical activity. As part of family screening, her father and brother were also found to carry the same DSP mutation. They were asymptomatic, with normal systolic function, isolated myocardial fibrosis, and a low risk of life-threatening arrhythmias according to the DSP-risk score. All affected members exhibit cutaneous findings suggestive of a DSP mutation - woolly hair and palmar keratosis.

Conclusion: Our patient met the 2024 European Task Force diagnostic criteria for ACM including systolic dysfunction, ring-like fibrosis, low QRS voltage and negative T wave, SVT, and DSP mutation. Multimodality imaging and genetic testing played a crucial role in establishing the final diagnosis in a young patient with a history of cardiac arrest. This case highlights intrafamilial variability and incomplete penetrance in cardiac genetic diseases, underscoring the importance of careful family screening to detect other affected members.

A Rare Cause of Hypertrophic Obstructive Cardiomyopathy – Mucopolysaccharidosis Type IVB – a Case Report

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Objectives: Mucopolysaccharidosis type IV (MPS IV), or Morquio syndrome, is a genetically inherited lysosomal storage disorder resulting from deficient activity of GALNS (type IVA) or GLB1 (type IVB), leading to systemic accumulation of keratan sulfate. While skeletal manifestations dominate early clinical presentation, cardiac involvement – primarily valvular thickening and regurgitation – is an underrecognized but important aspect of disease progression. Mitral and aortic valves are most frequently affected. Myocardial and conduction system involvement may occur in advanced stages. Echocardiographic monitoring is essential even in asymptomatic patients. Integrating cardiovascular surveillance into the standard care pathway improves early detection, informs treatment planning, and may enhance patient prognosis

Methods: We present a case of a 27-year-old woman referred for hypertrophic cardiomyopathy (HCM) with LV outflow tract obstruction (LVOTO) and atypical systemic features.

Results: Clinical examination showed short stature, facial dysmorphism, and musculoskeletal abnormalities including scoliosis and hip subluxation. Cardiac imaging revealed concentric LV hypertrophy, mitral valve elongation with SAM, and severe LVOTO. Chronic myocardial injury was suspected based on elevated NTproBNP and high-sensitivity troponin. The unusual combination of cardiac and skeletal findings prompted metabolic screening, which revealed elevated glycosaminoglycans and confirmed mucopolysaccharidosis type IVB (MPS IVB) via enzyme and genetic testing. With no disease-specific therapy available, beta-blockers were initiated per current ESC guidelines, leading to clinical improvement and reduced LVOTO at follow-up. Surgical options were avoided due to high anesthetic risk and the mitral valve mechanism of obstruction. Due to the tendency towards hypoglycemia in patients diagnosed with MPS, treatment with SGLT2 inhibitors could not be initiated.

Conclusion: This case highlights the importance of recognizing atypical systemic features in patients with HCM, prompting early evaluation for metabolic disorders like MPS IVB. Cardiac involvement, particularly mitral valve abnormalities and LVOTO, significantly impacts prognosis. Timely diagnosis and tailored management are essential to improve outcomes in this rare multisystem disease.

Beyond Diagnosis: a Clinical Case of Type II Spinal Muscular Atrophy Treated with Nusinersen – Therapeutic Challenges and Multidisciplinary Follow-Up

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Introduction: 5q spinal muscular atrophy (SMA II)type II is a rare autosomal recessive neuro-muscular disorder characterized by degeneration and apoptosis of alpha motor neurons in the anterior horn of the spinal cord. Onset typically occurs in childhood and leads to progressive motor function.

Objectives: To present the functional evolution of a female patient with SMA II treated with nusinersen, with emphasis on the timing of assisted verticalization after orthopedic intervention. The aim is to highlight the role of multidisciplinary decisions in achieving a relevant functional milestone, rarely reached in the classical course of SMA II.

Methods: We present the case of a 6-year-old girl with a genetic diagnosis of 5q SMA type II with homozygous deletion of the SMN1 gene and three copies of the SMN2 gene. Treatment with nusinersen began in November 2021 (13 doses to date). Progress was monitored using validated functional scales – CHOP-INTEND, HINE, HFSME, RULM, Barthel – as part of a complex interdisciplinary follow-up (neurology, orthopedics, pulmonology, physical therapy). In March 2025, she underwent orthopedic surgery for lengthening of the Achilles tendons and hamstrings, followed by immobilization, orthotics, and resumption of functional rehabilitation.

Results: Functional evaluations showed stable motor progress, with improvements in mobility and balance. At the latest assessment (May 2025), scores were: CHOP-INTEND 62/64, HINE 17/26, HFSME 24/66, RULM 23/37, Barthel 40/100. Extension of the left knee improved from -55 to -11 degrees, and dorsal flexion of the right ankle from -70 to -35 degrees. The patient achieved assisted standing and moves using a wheelchair, independently mobilized over short distances.

Conclusions: This case reflects the positive impact of nusinersen treatment and coordinated multidisciplinary interventions in enhancing motor potential and quality of life in patients with SMA type II.

Potential Implication of MicroRNA21 and Matrix Metalloproteinases in Myocardial and Arterial Function in Patients with Coronary Disease and Type-2 Diabetes at Baseline and 1-Year Follow Up

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Background: Circulating microRNAs, particularly miR21, are known to be involved in cardiovascular diseases and atherosclerotic processes. However, their role in the setting of ST-elevation myocardial infarction (STEMI), and their predictive role of left ventricular (LV) dysfunction is less clear. Aim. To determine the association of circulating miR21, as well as MMP1 and MMP 9, with LV ejection fraction (LVEF), global longitudinal strain (GLS), and arterial function, in patients with STEMI and chronic coronary syndromes (CCS), at baseline and 1-year follow-up.

Methods: 90 patients (61% men, 58+/-12 years), including 60 patients with STEMI (30 patients with type 2 diabetes (T2D), 30 patients without T2D), and 30 patients with CCS were assessed within 24 hours of admission by serum microRNA quantification, and serum MMP-1 and MMP-9 analysis. At baseline and 1-year follow up, 2D and 3D echocardiography were used to assess LVEF; speckle tracking to assess GLS, radial strain (RS), circumferential strain (CS), and area strain (AS); CAVI and ABI to assess arterial function.

Results: miR21 and MMP1 were significantly higher in patients with STEMI vs. CCS. In patients with STEMI, at 1-year there was a significant increase of 2D and 3D LVEF (p<0.04), 2D and 3D GLS (p<0.001), and 3D RS and AS (p=0.03). By univariate analysis, MMP1 correlated with changes of R-CAVI and L-CAVI (r=0.36 and r=0.32, both p<0.01), while miR21 correlated with changes of 3D LVEF (r=-0.32, p<0.05), CS (r=-0.36, p=0.02), and RS (r=-0.38, p=0.01). In patients with STEMI without diabetes, miR21 correlated with 3D GLS, CS, RS, and AS (r of -0.52, -0.53, -0.53, -0.60, all p=0.01). In patients with CCS, MMP9 correlated with RABI and LABI (r of -0.48, -0.43, all p<0.05), while miR21 correlated with 2D and 3D GLS (r of 0.89, 0.83, all p<0.05). Reduction of miR21

was an independent predictor of increase of 3D GLS in patients with STEMI without T2D (r^2=0.27, p=0.01), while increase of miR21 was an independent predictor of increase of 2DGLS in patients with CCS (r^2=0.79, p=0.01) at one-year. **Conclusions:** Circulating miR21, as well as MMP1 and MMP9, are potential biomarkers of ventricular function in patients with STEMI, correlating with myocardial deformation parameters and showing potential predictive roles. However, further studies are needed to establish their role in cardiovascular diseases.

Understanding Ultra-Processed Foods (UPFs) Among Young Adults in Romania

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Introduction: The rising prevalence of obesity in Romania represents a significant public health concern. Consumption of ultra-processed foods (UPFs), industrial formulations with minimal nutrients and abundant additives, is a contributing factor, as many studies have revealed their association with obesity and metabolic disorders. Hence, this study aims to evaluate the level of knowledge among young adults about UPFs.

Methods: We conducted a cross-sectional, observational study in Romania, directed towards individuals aged 18 to 40 years. Data were collected through a voluntary, self-administered, online questionnaire, with an estimated completion time of approximately 10 minutes. Statistical analysis was performed to evaluate the dataset.

Results: Among 325 responses, 310 fulfilled the age criteria. Participants had a mean age of 23.15 ± 3.58 years, 79,03% were females, and 80,32% were living in urban areas. Notably, 37.10% of responders reported being knowledgeable of UPFs, 55.48% stated possibly knowing about them, and 85.16% selected the correct definition of UPFs. However, only 65.58% of respondents correctly classified yogurts with fruit and cereal bars as UPFs. Male participants provided more accurate responses concerning the degree of processing of 7 dairy products (p=.047). Responders from urban areas exhibited higher accuracy in classifying the processing level of cereal-based products (p<.001) and fruits (p<.001), whereas rural residents outperformed in classifying meat foods (p=.033). Furthermore, we observed confusion among respondents regarding the distinction between high-salt, sugar, or fat processed foods and nutritionally balanced ultra-processed foods.

Conclusions: This study demonstrates a general awareness of ultra-processed foods (UPFs) in Romania, but also highlights misconceptions, particularly regarding specific products and challenges in distinguishing between ultraprocessed and processed foods. These findings emphasize the need for targeted educational efforts to address these gaps in understanding.