Mi-Med 2025

Organised By: Faculty of Medicine, MAHSA University Malaysia

24th – 25th June 2025

MAHSA International Medical Sciences and Technology Conference 2025

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MAHSA UNIVERSITY

Message from the Vice Chancellor, MAHSA University

Dear Esteemed Guests, Scholars, and Participants,

It gives me great pleasure to welcome you all to the inauguration of MAHSA International Medical Sciences and Technology Conference, hosted by MAHSA University. As we gather here today, we embark on a journey of scholarly exchange and intellectual discourse that promises to shape the future with Emerging Trends and New Insights for Health and Disease.

Conferences such as this serve as pivotal platforms for the convergence of ideas, the fostering of collaborations, and the exploration of innovative solutions to the challenges facing our world today. They represent the pinnacle of academic endeavor, where researchers, educators, and practitioners come together to share their insights and discoveries.

The theme of this year's conference, "Innovating for Health: Advances in Medical, Life Sciences, and AI-Driven Research," reflects the transformative journey of contemporary healthcare, driven by scientific progress and technological innovation", resonates deeply with the core values of our institution. The scope of this conference is to encourage research and innovative ideas in diverse areas from Medical and Lifesciences perspectives towards sustainable health and also to align with the needs of the society and demands from the industry. Over the course of the next 2 days, we will engage in rigorous debates, participate in thought-provoking panel discussions, and witness presentations that push the boundaries of knowledge.

I would like to express my sincere gratitude to the organizing committee, whose dedication and hard work have made this event possible. Their meticulous planning and attention to detail have ensured a program that is both comprehensive and enriching.
To our distinguished keynote speakers and session chairs, thank you for sharing your expertise and insights with us. Your contributions will undoubtedly inspire and challenge us to think critically and creatively.

Lastly, I extend my warmest welcome to all participants, whether you have travelled from afar or are joining us locally. Your presence enriches the dialogue and underscores the importance of collaborative efforts in advancing our collective understanding.

As we embark on this journey together, let us embrace the spirit of inquiry and collaboration that defines MAHSA University. May this conference be a catalyst for new ideas, lasting partnerships, and meaningful contributions to our respective fields.
Thank you, and I wish you all a productive and memorable conference.

Foreword from the Dean, FOM, MAHSA University

It is with great pride and anticipation that I welcome you to the MAHSA International Medical Sciences and Technology Conference 2025 (Mi-Med 2025), scheduled to take place on the 24th and 25th of June 2025. This year's theme, "Innovating for Health: Advances in Medical, Life Sciences, and Artificial Intelligent (AI)-Driven Research," reflects the transformative journey of contemporary healthcare, driven by scientific progress and technological innovation".

In the 21st century, the integration of biomedical sciences with advanced technologies such as artificial intelligence (AI), machine learning, and precision medicine has fundamentally redefined the paradigms of diagnosis, treatment, and healthcare delivery (Topol, 2019; Jiang *et al*., 2017). MAHSA International Medical Sciences and Technology Conference 2025 (Mi-Med 2025) aspires to serve as a catalyst for such transformation by fostering interdisciplinary dialogue, facilitating research dissemination, and nurturing global collaboration among clinicians, researchers, educators, and students.

Our theme addresses the urgent need to reimagine how we approach complex health challenges—from emerging infectious diseases like COVID-19 to the rising global burden of non-communicable diseases (World Health Organization, 2023). These challenges call for resilient health systems underpinned by scientific evidence, innovation, and a commitment to equitable healthcare access. Conferences like Mi-Med provide a unique platform for exploring novel approaches that bridge the gap between medical theory and clinical application.

The conference programme promises a stimulating experience, featuring keynote addresses, thematic panel discussions, and hands-on workshops. These activities will delve into current breakthroughs and foster dialogue on critical issues such as digital health, genomics, regenerative medicine, and AI-enabled diagnostics (Esteva et al., 2019; Davenport & Kalakota, 2019). It is our sincere hope that these interactions will ignite new research ideas, inspire collaborative projects, and empower future leaders in the medical sciences.

I would like to express my deepest appreciation to the dedicated members of the organizing committee, our esteemed sponsors, and all participants who have contributed to the success of Mi-Med 2025. We are especially indebted to our visionary leader, YB Senator Tan Sri Prof. Dato' Dr. Hj Haniffa Bin Hj Abdullah, Chairman of MAHSA Group of Companies, whose steadfast support has been instrumental in sustaining this annual international platform. Our heartfelt thanks also go to Dato' Dr. Shahril, Group Managing Director, for his unwavering encouragement and guidance.

As we convene under the shared mission of advancing global health through research and innovation, I encourage every participant to fully engage, exchange ideas, and embrace the possibilities that emerge from this collective endeavour. Together, let us reaffirm our commitment to excellence and contribute meaningfully to the future of healthcare.

Welcome to Mi-Med 2025. Let the pursuit of knowledge, innovation, and global impact commence.

Warmest regards,

Prof. Dr. Rusli Bin Nordin
Dean, Faculty of Medicine
MAHSA University

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Foreword from the Organising Chairman, Mi-Med 2025, MAHSA University

It is with great pleasure that I welcome you to the

MAHSA International Medical Sciences and Technology Conference (Mi-MED 2025), themed "Innovating for Health: Advances in Medical, Life Sciences, and AI-Driven Research."

This prestigious event, taking place on 24–25 June 2025 at MAHSA University, Malaysia, serves as a dynamic platform for academicians, researchers, clinicians, and professionals from around the world to exchange ideas, present cutting-edge research, and foster meaningful collaborations in the ever-evolving landscape of health sciences.

Our carefully curated program includes keynote addresses, expert panel discussions, and scientific sessions led by distinguished local and international speakers. We believe these engagements will not only stimulate intellectual discourse but also open new avenues for academic growth and cross-disciplinary innovation.

I warmly invite you to participate actively—share your work, engage with peers, and make the most of the opportunity to expand your knowledge and networks. Your contributions are vital to making Mi-MED 2025 a truly enriching and impactful experience. I would also like to express my sincere appreciation to the organizing committee, speakers, and participants for their unwavering commitment and support in making this conference possible. Thank you for being part of Mi-MED 2025. We look forward to welcoming you to an inspiring and productive event.

Warm regards,

Assoc. Prof. Dr. Venkata Suresh Chinni

MSc (Biochemistry), PhD (Dr. rer. nat, University of Muenster, Germany),
Deputy Dean (Postgraduate and Research), Faculty of Medicine
MAHSA University
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Organizing Committee-Mi-Med 2025

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KEYNOTE SPEECH 1:

“Research and updates on respiratory diseases”

Professor Dato' Dr Hj Abdul Razak Muttalif
Senior Consultant Chest Physician
Faculty of Medicine, MAHSA University

Millions of people worldwide, including children, adults, and the elderly, are impacted by respiratory disorders, which are a primary cause of morbidity and mortality globally. Respiratory disorders require specialized knowledge and access to cutting-edge technologies for monitoring and treatment. Rapid development of research and AI, helped in its potential uses in respiratory care, such as precise diagnosis, individualized treatment strategies, and improved patient outcomes. One of the primary challenges in respiratory care is the accurate and timely diagnosis of respiratory conditions. Many respiratory diseases, such as COPD or asthma, share similar symptoms, which can be difficult to differentiate.

Tuberculosis (TB) is one of the major causes of mortality worldwide, leading to approximately 1.4 million deaths and 10 million new cases annually. The digitalization of radiology has solved technical challenges, such as manual film processing, reagent replacement, and maintenance of film processors, and has brought high-quality images of CXR even in resource-limited settings. Similar role in the diagnosis and management of lung cancer and other respiratory diseases have been advanced with research and AI.

KEYNOTE SPEECH 2

“Innovative Strategies in Drug Discovery and Development: Harnessing the Power of Natural Products”

Assoc. Prof Dr. Dr. Mahendran Sekar

School of Pharmacy, Monash University Malaysia, Bandar Sunway, Selangor, Malaysia

Dr. Mahendran Sekar is currently working as an Associate Professor at the School of Pharmacy, Monash University Malaysia. With extensive experience in academia and research, he has made significant contributions to drug discovery, natural product development, and green technology innovations. Dr. Mahendran has received numerous national and international accolades for his outstanding work in academic, research, and innovation. Notably, he was honored with the Anugerah Pendidik Cemerlang MARA 2018, recognizing his excellence in education. His innovative research has earned him gold medals for three consecutive years at the International Invention Innovation & Technology Exhibition (ITEX 2017, 2018, 2019). His research expertise lies in drug discovery and natural product-based therapeutics, particularly focusing on eco-friendly and sustainable approaches in pharmaceutical development. Throughout his career, Dr. Mahendran has successfully supervised over 25 undergraduate and 10 postgraduate students, guiding them in cutting-edge research. A prolific researcher, he has published over 175 articles in ISI and SCOPUS-indexed journals and actively contributes as a reviewer for leading international scientific journals. His work continues to drive advancements in pharmaceutical sciences, fostering innovation in drug formulation, bioactive compounds, and therapeutic development. With a passion for scientific excellence and innovation, Dr. Mahendran Sekar remains a key figure in pharmaceutical research, shaping the future of natural product-based drug development.

KEYNOTE SPEECH 3

“Zebrafish and Beyond: Sustainable Models for Ethical and Efficient Pharmacological Screening”

Dr. J. Srikanth
Associate Professor in Pharmacology and Assistant Dean (Students) at the Sri Ramachandra Faculty of Pharmacy, SRIHER (Deemed to be University), Chennai, India

In the evolving landscape of drug discovery, the call for sustainable, ethical, and cost-effective alternatives to traditional animal models has gained unprecedented importance. This session, delivered by Dr. J. Srikanth—Innovation Ambassador, Associate Professor in Pharmacology, and Assistant Dean (Students) at Sri Ramachandra Faculty of Pharmacy—explores the integration of zebrafish (Danio rerio) as a frontline organism in neuropharmacological and toxicological research, highlighting its translational relevance and compatibility with the 3Rs principle (Replacement, Reduction, and Refinement).

Zebrafish offer unique advantages: high genetic homology with humans, rapid developmental cycles, optical transparency during early stages, and suitability for high-throughput screening. These features make them particularly powerful for evaluating neurobehavioral effects, developmental toxicity, and drug-induced neuroprotection. Dr. Srikanth’s lab has effectively utilized zebrafish in assessing the neuroprotective potential of natural flavonoids against heavy metal and endocrine disruptor-induced neurotoxicity, while also integrating in silico tools such as molecular docking, dynamics, and ADMET profiling to predict therapeutic efficacy and safety.

The presentation will also explore novel screening platforms developed under his leadership, including patented laboratory devices that support ethical preclinical research. These innovations, combined with computational pharmacology and AI-based modeling, create a hybrid workflow that significantly reduces reliance on mammalian models while maintaining translational reliability.

Furthermore, the session underscores the global ethical imperatives for adopting sustainable research practices, correlating with the United Nations’ Sustainable Development Goals (SDGs), particularly SDG 3 (Good Health and Well-being), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 12 (Responsible Consumption and Production). Attendees will gain practical insights into model selection, experimental design, and cross-species validation methods that uphold both scientific rigor and humane values.

Through a blend of case studies, collaborative innovations, and policy perspectives, this talk will empower academic and industrial researchers to adopt next-generation pharmacological screening models that are efficient, ethical, and aligned with international standards in biomedical research.

KEYNOTE SPEECH 4

“Innovative Oral Thin Film Technology Using Vitamin C for Tobacco Detox: A Non-Nicotine-Based Cessation Approach”

Dr. A. Jerad Suresh
Principal of Sri Ramachandra Faculty of Pharmacy, Sri Ramachandra Institute of Higher Education and Research (Deemed to be University), Chennai.

Nicotine addiction continues to be a major global health concern, responsible for over six million deaths annually. Existing nicotine replacement therapies (NRTs) such as patches, gums, and lozenges primarily deliver additional nicotine to the body and are often associated with undesirable side effects, limiting long-term compliance. Addressing this gap, the present study introduces a novel, fast-dispersing thin film containing ascorbic acid, aimed at providing a dual-action approach for nicotine cessation and detoxification. The innovation is based on the finding that ascorbic acid can facilitate the reconversion of cotinine, a primary and toxic metabolite of nicotine, back into nicotine, thereby promoting its natural elimination and reducing toxic accumulation. A prototype thin film was developed and showed 100% ascorbic acid release within one minute. In vitro studies using plasma from chronic smokers demonstrated successful cotinine conversion in low-tar smokers, but not in high-tar users, indicating a possible link to antioxidant enzyme activity. A human volunteer study involving 72 participants confirmed these findings, and the study was approved by the Institutional Ethics Committee (CSP/23/NOV/139/920). The innovation has been granted an Indian patent, and international patenting is in progress. This non-nicotine-based, scalable, and easy-to-administer thin film offers a promising alternative for smoking cessation, particularly in developing countries where the burden of tobacco use remains high.

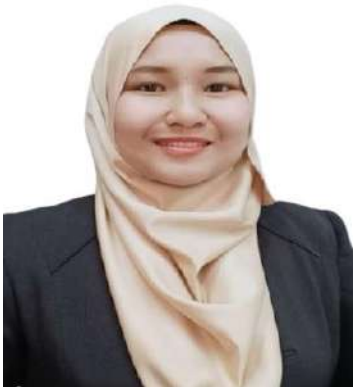
KEYNOTE SPEECH 5

“The Internet of Things (IoT) Revolutionizing Emergency Medicine”
Associate Professor Dr. Haji Abdul Ali bin Raja Mohamed

Deputy Dean. Head, School of Emergency Medical Services & Sciences, FOHSNE.Head, Department of Emergency Medicine, Anesthesia and Critical Care, FOM Director, MAHSA Centre for Clinical Skills Education and Training (a Benchmarked Centre), MAHSA University.

The Internet of Things (IoT) is poised to transform emergency medicine, offering unprecedented opportunities for real-time monitoring, rapid response, and improved patient outcomes. This lecture will explore the current landscape and future potential of IoT applications in emergency medical settings. We will delve into how interconnected devices, sensors, and data analytics are being leveraged to enhance pre-hospital care, streamline emergency department operations, and facilitate remote patient management. Key areas of focus will include: wearable sensors for continuous vital sign monitoring and early detection of critical events; smart ambulances equipped with telemedicine capabilities and real-time data transmission; IoT-enabled emergency departments for optimized patient flow and resource allocation; and the use of remote patient monitoring systems for post-discharge care and chronic disease management. We will also address the challenges and ethical considerations associated with implementing IoT technologies in emergency medicine, including data security, privacy, and interoperability. By examining real-world examples and emerging research, this lecture will provide a comprehensive overview of how IoT is revolutionizing emergency care and paving the way for a more proactive and responsive healthcare system.

KEYNOTE SPEECH 6



“Radiomics: Advancing from Medical Imaging to AI – Driven Automated Interpretation”
Ts. Dr. Mardhiyati binti Mohd Yunus

Lecturer and coordinator, UNISEL research and Industrial Linkage (CRIL), Medical Diagnostic Department, Faculty of Health Sciences, UNISEL.

Ts. Dr. Mardhiyati binti Mohd Yunus defended her groundbreaking doctoral thesis on radiomics and machine learning applications in Coronary Computed Tomography Angiography (CCTA) at Universiti Kebangsaan Malaysia (UKM) in August 2023. Her innovative research led to the creation of the Computed Tomography Artificial Intelligence Detection for Atherosclerosis (CTAID-A) tool, an automated machine learning tool for detecting atherosclerosis. This achievement earned her the highest honours, including the Best Thesis Grade and timely graduation. Her novel approach to integrating artificial intelligence in medical imaging not only won her the Gold Medal Award at the MTE International Innovation Award 2023 but also garnered the prestigious Anugerah Inovasi Negeri Selangor Gold Award in 2024 and Gold Award in International Innovation Competition (INNOMed) in 2024. In her educational journey, Ts. Dr. Mardhiyati demonstrated exceptional academic prowess, completing her Master in Medical Imaging with a specialization in Breast Imaging from UiTM, earning a Dean’s Award with a GPA of 3.92. Her undergraduate studies in Diagnostic Imaging and Radiotherapy at the National University of Malaysia (UKM) were equally distinguished and marked by consistent academic excellence. As a lecturer at UNISEL since March 2018, MAHSA University since 2012 and 4 years of experience as a diagnostic radiographer in private hospitals since 2009 Ts. Dr. Mardhiyati has led the Medical Imaging Program (2019-2023), Coordinator for Centre of Research, Innovation and Industrial Linkage (CRIL) UNISEL, orchestrating curriculum development, research, innovation and fostering research collaborations. Her teaching repertoire spans various subjects, including Radiographic Anatomy, Pathology, and Image Processing, reflecting her deep expertise and commitment to education. Ts. Dr. Mardhiyati’s research portfolio includes being the principal investigator for several grants and authoring numerous indexed publications including Book. Her work has consistently been recognized at international conferences, winning Best Paper, Poster, and Presenter awards. Her intellectual property, including the CTAID-A model, is a testament to her dedication to advancing medical imaging through technological innovation. Ts. Dr.

Mardhiyati's professional affiliations with esteemed bodies such as the Malaysian Allied Health Professions Practitioner, Malaysian Board of Technologist (MBOT), Malaysian Society of Radiographers member, and her active role in community health initiatives underscore her commitment to the field and society.

KEYNOTE SPEECH 7

“Tobacco Harm Reduction”

Associate Professor Sharon L How

Head of Department of Psychiatry MAHSA University, Health Psychologist & Clinical Hypnotherapist

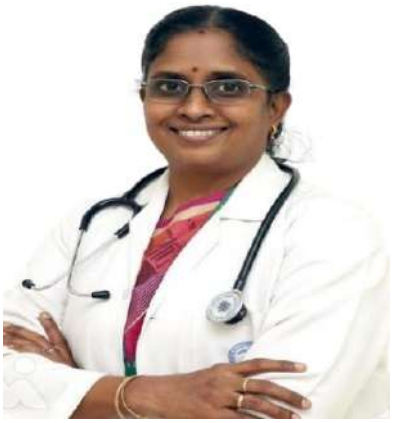
Harm reduction refers to policies, programmes, and practices that aim to reduce the harm associated with the use of psychoactive drugs in those individuals who are either unable or unwilling to stop their habit. The defining feature [is] the focus on the prevention of harm, rather than on the prevention of the drug use itself. Harm reduction therefore complements approaches that seek to prevent or reduce the level of consumption of a harmful substance.

Tobacco Harm Reduction (THR) refers to the substitution of a lower risk option which includes lower risk nicotine and tobacco products, e-cigarettes, nicotine replacement therapy, and low nitrosamine products. These options are primarily focused on those individuals who cannot quit or for those who refuse to quit smoking.

Tobacco Harm Reduction is not without controversy with some scholars and medics believing that complete abstinence is the only option available for those who are addicted to nicotine.

This plenary talk will begin with a historical overview of harm reduction after which a discussion of the latest developments in Tobacco Harm Reduction research will ensue.

KEYNOTE SPEECH 8



“Introduction to Clinical Trials: Basics, Importance, and Career Opportunities”
by Prof. Dr. Dr. Sangeetha Raja

Professor, Department of Pharmacology – SRM Medical College Hospital & Research Centre, SRM University, Chennai, Tamilnadu, India.

Dr. Sangeetha Raja is a Professor of Pharmacology at SRM Medical College Hospital & Research Centre, Chennai, INDIA, with expertise in pharmacogenomics and bioinformatics-driven drug discovery. With over a decade of experience in vaccine clinical trials, including active involvement in Phase I studies, she possesses extensive knowledge in clinical research design and translational medicine. Her doctoral research in Pharmacogenomics explores Metformin's dual modulation of the NLRP3 inflammasome and mitophagy in colon cancer. By integrating network pharmacology, molecular docking, and bioinformatics, her innovative work elucidates Metformin's anticancer mechanisms in diabetes-induced colon cancer, with promising applications for personalized treatment based on genomic expression profiles.Dr. Raja completed her undergraduate education at the esteemed Madras Medical College. A dedicated advocate for bioethics and medical education, she is recognized for her innovative teaching methodologies and ethical research practices. A respected presenter at international conferences and a significant contributor to preclinical studies, Dr. Raja also embraces diverse interests—she is proficient in playing the veena and has studied Carnatic music. Additionally, she co-established a charitable organization that supports medical expenses for underprivileged children and is currently co-initiating the development of a transgender care unit, reflecting her commitment to social equity.

KEYNOTE SPEECH 9

“Zebrafish: A Transformative Preclinical Model for Drug Safety and Efficacy Assessment”

Asst. Prof. Dr. D. Sivaraman

Department of Biotechnology, School of Energy Technology, Pandit Deendayal Energy University Gandhinagar, Gujarat, India

Dr. Sivaraman Dhanasekaran is an Assistant Professor at the Department of Biotechnology, Pandit Deendayal Energy University, Gujarat, specializing in Antimicrobial resistance (AMR). His research focuses on Nanotechnology, Targeted drug delivery, Pharmacology, Toxicology, and Biomaterials evaluation. He currently managing projects on anti-microbial resistance worth over ₹4 crores, funded by ICMR and STARS-DHE, collaborating with top institutions like Monash University and IIT Madras. With over 100 plus publications, two books, and multiple patents, he significantly contributes to pharmaceutical sciences. He serves as a reviewer and editorial board member for international journals and holds memberships in esteemed professional bodies. His achievements have earned him 25+ national and international accolades, including the Dr. A.P.J. Abdul Kalam Young Scientist Award

CONFERENCE ABSTRACTS:

ORAL PRESENTATION

Oral Presentation 1 (OP1):

Harnessing IGF-1 to Enhance Stem Cell-Mediated Tissue Healing

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Introduction Insulin-like growth factor-1 (IGF-1) is a key regulator of anabolic processes, including tissue repair, and is widely expressed during early and intermediate phases of healing. Wharton's jelly mesenchymal stem cells (WJ-MSCs) cultured with IGF-1 undergo immunophenotypic changes while enhancing their healing potential through increased cellular proliferation and upregulation of Collagen type I (Col1a1) and type III (Col3a1) gene expression. **Methods** WJ-MSCs obtained from Cryocord Laboratories Sdn Bhd were characterized and expanded. At passage 4, the WJ-MSCs were cultured with IGF-1 at concentrations of 5.0, 10, 15, and 20 ng/mL respectively for five days, with medium changes every two to three days. Cell proliferation was assessed daily using the MTT assay. On day five, immunophenotypic alterations were evaluated via multicolour immunophenotyping assay using a flow cytometry (FACSCanto II, BD). Col1a1 and Col3a1 gene expression were analysed using qRT-PCR. **Results** WJ-MSCs cultured with 10 ng/mL IGF-1 concentration demonstrated the highest WJ-MSCs proliferation rate on day 4 as compared to the control and 5.0ng/mL IGF-1 culture group. However, there were no significant differences in the proliferation rate between WJ-MSCs cultured with 10, 15, and 20 ng/mL IGF-1. While WJ-MSCs cultured with 10 ng/mL IGF-1 demonstrated the highest Col1a1 gene expression, WJ- MSCs cultured in 15ng/mL IGF-1 demonstrated the highest Col3a1 gene expression. **Conclusion** Our findings suggested 10ng/mL to be the ideal IGF-1 concentration to enhancing the healing potential of passage 4 WJ-MSCs through the increased of cellular proliferation and upregulation of Col1a1 and Col3a1 gene expression.

Keywords

Insulin-Like Growth Factor I (IGF-1), Wharton's Jelly Mesenchymal Stem Cells (WJ- MSCs), Tissue Repair and Regeneration, Stem Cell Culture, Growth Factor Modulation

Oral Presentation 2 (OP2):

Developing a Tool for Customizable PubMed Metadata Export: PubMedXport2

Myo Kyi Tha[1] & Nilar Khin[2]

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Introduction: Structured metadata is essential for the organization, analysis, and reuse of scientific information in biomedical research, with PubMed serving as a cornerstone in this landscape. However, PubMed's native export options require users to choose from predefined formats with fixed metadata fields, limiting flexibility and downstream usability. **Aim:** To develop and evaluate a browser-based tool that enables users to select custom metadata fields and export formats without requiring programming skills or software installation. **Methods:** We developed PubMedXport2 as a frontend-only web application using HTML, CSS, and JavaScript, integrating the NCBI Entrez API for metadata retrieval. The tool operates entirely within the browser and does not require backend infrastructure. **Results:** PubMedXport2 allows users to select specific metadata fields and export records in CSV, XLSX, JSON, or MEDLINE (PubMed) formats, with fixed schema support for BibTeX and RIS. It includes features such as input validation, real-time feedback, and enrichment of metadata with author roles, institutional affiliations, and country attribution. In performance tests, the tool showed high retrieval success rates and linear scalability, averaging 0.21 seconds per article. Exported files were compatible with spreadsheets, citation managers, and bibliometric analysis platforms. **Conclusion:** We developed and tested PubMedXport2 to address limitations in existing PubMed export options. We expect it will lower technical barriers and promote more efficient, reproducible research workflows, particularly for researchers with limited programming experience or IT support.

Keywords

PubMed; Metadata export; Biomedical literature; NCBI Entrez API

Oral Presentation 3 (OP3)

Centella Asiatica Attenuates Acetylcholinesterase Levels In Hippocampus Of Chronic Stress Induced Male Wistar Rats

Saravanan Jagadeesan[1], Thirupathirao Vishnumukkala[2], Sreenivasulu Sura[3], Gan Quan Fu[4], Krishna Chaitanya Reddy[5] , Shajan Koshy[6], Narendiran Krishnaswamy[7] , Ravindranadh Gandrakota[8], Musa Samaila Chiroma[9], Mohd Amir Kamaruzzaman[10]

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Introduction: Chronic stress develops when persistent external stimulus is applied resulting in depression. Acetylcholinesterase enzyme (AChE) levels in the brain play an important role. The present study aimed at evaluating the neuroprotective potentials of Centella asiatica in attenuating the acetylcholinesterase levels in the brains of chronic mild stress (CMS) induced male Wistar rats. **Methods:** Thirty-six male Wistar rats aged 8 – 10 weeks were held in six groups. One group was the control. The other groups were randomly administered CMS by any one of nine (9) different stressors viz. restrain, forced swimming in cold water, overnight food and water deprivation, wet bedding, cage tilt at 45°, tail pinching, overcrowding and change of cage mates for a period of 64 days. One stress group was model group while others were administered with crude extracts of CA at the doses of 200, 400, 800 and fluoxetine (Flx) 10 mg/kg body weight. At the end of 64 days, the rats were euthanised and the brain tissue was collected and AChE levels evaluated using ELISA. **Results:** The model group rats exhibited increase in AChE levels the rat groups receiving CA showed attenuated AChE levels. **Conclusion:** CA effectively attenuates AChE levels in the CMS induced rat brains.

Keywords
Chronic stress, Centella asiatica, Depression, Acetylcholinesterase, Fluoxetine

Oral Presentation 4 (OP4):

Molecular mechanism involved in the wound healing activity of Poliumoside

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Introduction: Poliumoside, a bioactive phenylethanoid glycoside from Teucrium polium, is noted for its therapeutic potential. This study investigates its molecular mechanisms in wound healing using fibroblast models to elucidate its role in tissue repair. **Methods:** Poliumoside (≥98% purity; Cayman Chemical, Ann Arbor, MI, USA) was tested for wound healing using murine primary fibroblasts cultured in DMEM with 10% FBS and 1% penicillin- streptomycin at 37°C, 5% CO_2. A scratch assay was performed by creating a uniform scratch with a sterile 200-µL pipette tip. Cells were treated with poliumoside (10, 100, 1000 µM) for 48 h. Wound closure was quantified from images captured at 0 and 48 h using ImageJ. Total RNA was extracted (RNeasy Mini Kit, Qiagen), quantified (NanoDrop, Thermo Fisher), and reverse transcribed (High-Capacity Kit, Applied Biosystems). qPCR (StepOnePlus, Applied Biosystems) with SYBR Green was performed for 17 wound healing genes. Expression was analyzed using the $2^{-}\Delta\Delta Ct$ method. Data (mean ± SEM) were analyzed with GraphPad Prism; $p < 0.05$ was considered significant. **Results:** Poliumoside enhanced wound closure in murine fibroblasts in a dose-dependent manner (10–1000 µM), achieving complete closure within 12 hours. It upregulated **CCL2**, **CXCL10**, **CXCL11**, **VCAM-1**, **ICAM-1**, **TIMP-1**, **collagen**, and **PAI-1**, while downregulating **CXCL8**, **E-selectin**, **EGFR**, **M-CSF**, **IL-6**, **VEGF-α**, **TIMP-2**, and **ERK1**. **MMP-1** expression was modulated. **Conclusion:** The wound-healing activity of poliumoside is mediated through the coordinated regulation of genes involved in key phases of tissue repair, including haemostasis, inflammation, neovascularisation, granulation tissue formation, re-epithelialization, and extracellular matrix remodelling. These findings highlight poliumoside's potential as a bioactive compound for promoting efficient and accelerated wound healing.

Keywords:

T. polium, Poliumoside, wound healing, scratch assay, RNA expression

Oral Presentation 5 (OP5):

Heart Failure in The Obese Population: Overcoming Diagnostic Barriers with Artificial Intelligence

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Introduction: Heart failure (HF) is a major cause of morbidity globally and increasingly prevalent among obese individuals. In Malaysia, where over 50% of adults are classified as overweight or obese, timely diagnosis of HF in this population is clinically challenging. Overlapping symptoms such as fatigue, dyspnea, and peripheral edema are often attributed to obesity itself, leading to delayed diagnosis and suboptimal outcomes. This review aims to explore current evidence on the diagnostic challenges of HF in obese patients and the potential role of artificial intelligence (AI)- assisted tools in improving early recognition. **Methods:** A narrative literature review was conducted using articles published between 2019 and 2024. Databases searched included PubMed, ScienceDirect, and Google Scholar. Search terms included "heart failure," "obesity," "diagnostic delay," "HFpEF," and "artificial intelligence in cardiology." Six peer-reviewed articles were selected based on relevance, recency, and focus on diagnostic patterns and innovations in HF care for obese patients. These included: El Hadj Othmane et al. (2025, Cureus), Journal of Clinical Medicine (2024), van Dalen et al. (2025, Cardiovascular Diabetology), European Journal of Heart Failure (2025), PMC Review on AI in HF Diagnosis (2024), and ScienceDirect AI-Echo HFpEF Detection (2023). **Results:** The literature highlights that obesity complicates clinical assessment of HF due to masked physical signs and overlapping symptoms. HF with preserved ejection fraction (HFpEF) is particularly underdiagnosed in obese individuals. Several papers describe the limitations of traditional bedside assessment and the role of AI-driven models using clinical and imaging data to improve early detection. **Conclusion:** Diagnosing HF in obese patients requires heightened clinical suspicion and structured diagnostic strategies. Literature supports the integration of AI-assisted tools and decision-support systems to overcome current limitations. Greater awareness and adaptation of diagnostic pathways are essential to improve timely recognition and patient outcomes in this growing high-risk population.

Keywords
Heart failure, Obesity, Diagnosis, Artificial intelligence, HFpEF

Oral Presentation 6 (OP6):

Evaluation of Serum Dopamine and Ghrelin as Biomarkers Associated with Addiction-Linked Behaviors in E-Gamers

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Introduction: There has been an increase in internet gaming, particularly online gaming which has affected addicted gamers' behaviour in various ways, including, aggressiveness, lies, emotional instability, and indifference. Ghrelin plays a vital role in reward-based regulation by interacting with dopamine signaling in the mesolimbic circuit and neuroendocrine pathway. The main objective of this study was to evaluate serum dopamine and ghrelin as biomakers associated with addiction-linked behaviors in e-gamers and to determine the correlation between dopamine and ghrelin in e-gamers. **Methods:** There were 108 participants between 18-35 years old were completed the survey. A total of 58 subjects were involved for blood sampling. There were 27 control, 18 excessive and 13 pathological according to the classification of gaming addiction scale (GAS). Competitive ELISA kits were used to determine both serum biomarkers, i.e. dopamine and ghrelin in both control and gamers. Graphpad Prism® was used to analyse the significance difference between control, excessive and pathological e-gamers by Tukey's test and correlation between ghrelin and dopamine was performed using Pearson's correlation test. **Results**: Results obtained showed that the serum levels of ghrelin in both excessive and pathological e-gamers were significantly (p<0.0001) elevated compared with the control group. There was insignificant difference (p>0.05) in serum dopamine level was observed between control group and excessive e-gamers. However, a significant (p<0.0001) increase in serum dopamine level was seen in pathological e-gamers compared with the control group. **Conclusion:** This study demonstrates that serum dopamine and ghrelin levels are significantly associated with addiction-linked behaviours in e-gamers, as evidenced by the differences observed between e-gamers and the control group. These findings support the role of dopamine (a key neurotransmitter in the reward pathways) and ghrelin (a hunger-regulating hormone linked to motivation and craving behaviours) as potential biomarkers for assessing gaming-related addictive behaviours. Further research is needed to explore their mechanic roles and clinical implications in behavioural addictions.

Keywords:

Dopamine, Ghrelin, e-gamers, addiction, reward circuit.

Oral Presentation 7 (OP7):

Perceptions of Medical Students on Anatomy Teaching Resources and Their Influence on Learning Outcomes at Private Medical University in Malaysia

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Introduction: Exploring medical students' perception on anatomy teaching resources can help anatomists implement engaging educational strategies that reinforce knowledge retention. This study evaluates the preferences of medical students and their perceived significance in fulfiling specific learning outcomes for four gross anatomy and two histology teaching resources. **Methods:** An online survey was distributed among medical students from Year 1 to Year 5, where the ranking and rating scores obtained were analyzed using non-parametric tests. **Results:** Cadaveric prosection was found to be the best gross anatomy teaching aid, both by students' preference and perceived effectiveness, followed by plastic models and online multimedia resources, while printed resources were the least favoured. Although, light microscopy was significantly preferred over virtual microscopy, overall, both resources were perceived as equally valuable in achieving histology learning outcomes. **Conclusion:** The propensity for students preferring teaching resources with hands-on experience provides insight for anatomy teachers to emphasize such resources for better engagement while a blended approach aims to bridge the limitations of an individual resource.

Keywords:

Anatomy, Medical Students' Perception, Teaching Resources, Learning Outcomes.

Oral Presentation 8 (OP8):

The Role of Hypnotherapy in the Treatment of Osteoarthritis: A Comprehensive Review

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Introduction: Osteoarthritis (OA) is a long-term joint condition that causes cartilage breakdown, changes in the bone beneath the cartilage, and ongoing chronic inflammation. This leads to pain and limits movement. Most traditional treatments focus on easing symptoms, but newer options like hypnotherapy are being explored as alternative ways to manage pain. **Methods:** This review consolidates current research on OA pathophysiology, standard treatment approaches, and the therapeutic potential of hypnotherapy, emphasizing mechanisms of hypnosis-induced pain relief such as neuroplastic adaptation, regulation of inflammatory pathways, and cognitive reframing. **Results:** Findings from randomized controlled trials and meta-analyses indicate that hypnotherapy can substantially alleviate OA-related pain, improve mobility, decrease reliance on medication, and enhance psychological well-being. Neuroimaging evidence further supports its impact on brain regions involved in pain processing. **Conclusion:** Hypnotherapy presents a promising complement to conventional OA management, offering holistic relief by addressing both physical and psychological dimensions of chronic pain. However, broader clinical adoption requires standardized protocols, increased practitioner accessibility, and further empirical validation.

Keywords:
Osteoarthritis, Hypnotherapy, Chronic pain, Complementary therapy, Pain management

Oral Presentation 9 (OP9):

Anemia in Pregnancy and Its Association with Antenatal Care

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Introduction: Anemia in pregnancy is commonly seen, mostly in lower or middle-income countries, usually because of iron deficiency. The objective of the study is to determine the prevalence of anemia and its association with antenatal care among pregnant women in Dhaka City, Bangladesh. **Methods:** The study is a cross-sectional, descriptive study consisting of 480 pregnant women in their 3rd trimester. Some anthropometric and biochemical data were collected to determine the nutritional and health status of the women. An interview schedule, a structured questionnaire, and medical reports are used to collect the necessary data, and SPSS was used to analyze them. **Results:** 59% of the total participants are anemic in the study and it is pretty alarming. 33.6% of them have mild anemia, and 19.2% have moderate anemia. Almost all respondents took antenatal care. 45.6% of the participants visited antenatal clinics 4-6 times. The number of visits to ANCs and anemia is not highly associated (p value=0.179). Women are found most anemic during their second trimester. **Conclusion:** According to the result, women should have antenatal care where early diagnosis is available. Iron supplements and a balanced diet are also essential for a healthy pregnancy.

Keywords:

Anemia, Iron deficiency, Antenatal care, Pregnancy

Oral Presentation 10 (OP10)

Acute Myeloid Leukemia Presenting with Gum Bleeding and Bruising in a Previously Healthy Middle-Aged Male: A Case Report

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Abstract:
Acute Myeloid Leukemia (AML) is a clonal malignancy of the myeloid lineage often characterized by bone marrow failure and circulating blast cells. We report the case of a 47-year-old previously well Malay man who presented with progressive lethargy, recurrent fever, spontaneous gum bleeding, and easy bruising over two weeks. Clinical examination revealed conjunctival pallor, petechiae, gingival bleeding, and hepatosplenomegaly. Laboratory investigations revealed a markedly elevated white blood cell count of 368×10^9/L with >30% blasts, hemoglobin of 7.5 g/dL, and platelets at 23×10^9/L. Peripheral smear demonstrated large myeloblasts with Auer rods, and bone marrow aspirate confirmed >20% myeloblasts with hypercellularity, fulfilling the diagnostic criteria for AML. Initial management included oxygen supplementation, packed red blood cell and platelet transfusions, and empirical intravenous antibiotics for neutropenic coverage. The patient was stabilized and referred to a tertiary hematology center for further chemotherapy initiation. This case highlights the need for prompt clinical suspicion of hematological malignancies in patients presenting with pancytopenia, mucocutaneous bleeding, and constitutional symptoms. Early diagnosis using peripheral smear and bone marrow examination is essential to initiate timely management and prevent fatal complications such as disseminated intravascular coagulation or leukostasis

Keywords:
Acute Myeloid Leukemia, Gum Bleeding, Neutropenia, Myeloblasts, Auer Rods

Oral Presentation 11 (OP11)

AI Meets The Heart: Revolutionizing Cardiovascular Diagnosis From Genes to ECGS

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Abstract

Cardiovascular disease (CVD) remains the leading global cause of mortality, accounting for over 20.5 million deaths in 2021. In countries like India, CVD manifests nearly a decade earlier than in Western populations and is exacerbated by both modifiable (e.g., hypertension, diabetes, smoking) and non-modifiable risk factors. Among CVD presentations, acute myocardial infarction (AMI) is a critical emergency requiring timely diagnosis. Recent advancements in artificial intelligence (AI) have significantly impacted cardiovascular care, particularly in genomic analysis and diagnostic imaging. This review explores AI's dual role in genomic research and real-time AMI detection through electrocardiograms (ECGs). AI enables high-throughput genetic screening, uncovering novel variants (e.g., ANRIL, TTR, PCSK9) associated with elevated cardiovascular risk, thereby supporting early intervention and personalized treatment strategies. Additionally, AI-augmented ECG models have been developed to enhance diagnostic accuracy and speed in acute care settings. The ROMIAE multicenter prospective study, involving 8,493 patients across 18 Korean emergency departments, validated the AiTiAMI model against conventional tools like the HEART score and GRACE 2.0. AiTiAMI achieved an AUROC of 0.878, surpassing traditional methods in specificity (0.848) and positive predictive value (0.536). Combining AI-ECG with the HEART score improved net reclassification by 19.6%, underscoring its clinical utility. In conclusion, AI offers transformative potential in cardiology, from genetic risk profiling to acute event detection. AI-ECG models like AiTiAMI represent scalable, accurate diagnostic tools, while AI-driven genomics paves the way for individualized care. Together, these innovations promise to improve outcomes and reduce the global burden of cardiovascular disease.

Keywords

Artificial Intelligence, Cardiovascular Disease, Electrocardiogram, Genetics, Acute Myocardial Infarction, Machine Learning, ROMIAE Study, Risk Stratification, Precision Medicine.

Oral Presentation 12 (OP12):

Prevalence of Anatomical Variations Within The Ethmoidal Sinus Among Malaysian Population: A Computed Tomography (CT) Scan Study

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Background: The ethmoid sinus has crucial anatomical variations, with the olfactory fossa of varying depths. Therefore, to minimize the potential complications arising from functional endoscopic sinus surgery (FESS), it is essential to identify these variations prior to surgery. This study aims to determine the prevalence and distribution of Agger Nasi Cell (ANC), Haller cells (HC), Onodi cells (OC), and the olfactory fossa depth, which is defined by the Keros classification, among the diverse Malaysian population using computed tomography (CT) imaging. **Methods**: This is a cross-sectional study that involves 167 CT images of adult Malaysian subjects. The prevalence of ANC, HC, OC, and Keros classifications was documented. Descriptive and Inferential analysis was conducted to analyse the association between the prevalence of these variations with both genders and three ethnicities. **Results**: The highest prevalence was noted with ANC at 91%, followed by HC at 23.4%, and OC was the least common variation. Keros Classification Type II was the most prevalent across all ethnicities and genders. However, no statistically significant associations were found between gender, ethnicity, and the occurrence of these anatomical variations ($p < 0.05$). **Conclusion**: This study highlights the diversity of ethmoidal sinus variations among the Malaysian population but finds no significant demographic influence on their distribution. These findings emphasize the need for careful preoperative evaluation in FESS procedures to enhance surgical safety.

Keywords:
Ethmoid sinus, anatomical variations, Computed tomography, Prevalence, Malaysia

Oral Presentation 13 (OP13):

A Public Health Concern: Empowering Nurses and Strengthening Resilience for Disaster Preparedness and Management

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Abstract:
The global increase in natural and human-made disasters poses a persistent threat to public health and healthcare systems. These disasters affect millions of lives and drag them into a vicious cycle of poverty, homelessness, poor health, and loss of loved ones. These situations also negatively impact the achievement of key indicators of Sustainable Development Goals (SDGs) and Universal Health Coverage (UHC). Enhancing citizens' and communities' immediate and long-term care for acute shocks resulting from disasters is crucial to building resilience and to adapting successfully to ongoing challenges. A crucial next step in providing holistic care to the affected community is the development of healthcare workforce preparedness and readiness. Despite notable advancements in this field, there are still numerous practical and research gaps. There is inconsistent integration of nursing curricula for disaster preparedness. Internationally recognized frameworks and national policies aim to strengthen disaster preparedness, particularly for health professionals such as nurses, are available; however, their implementation is questionable. This presentation critically examines the gap between policy and practice, revealing how the lack of proactive preparedness leads to massive loss of life, infrastructure damage, and inefficient emergency responses. It aims to engage in a call to action: to prioritize and invest in building the disaster management capacity of nurses. The presentation also explores the unique, multidimensional role nurses can play at each phase of the disaster cycle, emphasizing the importance of a holistic approach that includes the physical, mental, social, and spiritual dimensions of care. With the integration of disaster content, enhanced simulation-based learning, and fostered interdisciplinary and community partnerships, nurses can be better equipped to lead resilient healthcare responses throughout the entire disaster cycle. The presenter will share evidence-based strategies that advocate for systematic changes to mainstream disasters at the institutional, national, and international levels.

Keywords:
Disaster, Nurses, Nursing Care, Preparedness, Management, Sustainable Development Goals (SDGs), Universal Health Coverage (UHC)

CONFERENCE ABSTRACTS:

ONLINE ORAL PRESENTATION

Online Oral Presentation 1 (OOP1)

Development and Validation of an Eco-Friendly UV-Spectrophotometric Method for the Simultaneous Estimation of Tolperisone Hydrochloride and Etodolac Using Vierordt's Method

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Introduction: The demand for eco-friendly analytical techniques has led to the adoption of green chemistry in pharmaceutical analysis. Tolperisone Hydrochloride (TOL), a centrally acting muscle relaxant, and Etodolac (ETO), a non-steroidal anti-inflammatory drug, are frequently combined for enhanced therapeutic effects. Their simultaneous estimation is crucial for quality control. This study focuses on developing and validating a green UV-spectrophotometric method for the simultaneous estimation of TOL and ETO using the simultaneous equation method, in accordance with ICH guidelines. **Methods:** A UV-spectrophotometric method was developed using a green solvent, likely ethanol or water. Maximum absorbance wavelengths were 258 nm for TOL and 278 nm for ETO. Linearity was established within 2.1–3.9 µg/mL for TOL and 5.6–10.4 µg/mL for ETO. The method was validated for linearity, precision, and assay as per ICH guidelines. A simultaneous equation method was employed for estimating both drugs in a tablet formulation. **Results:** The developed method exhibited good linearity for both drugs within the specified concentration ranges. Assay and precision results were within acceptable limits, confirming the method's accuracy and reproducibility. The procedure was effectively applied for the analysis of TOL and ETO in commercial tablets, with no interference from excipients. **Conclusion:** An accurate, precise, and eco-friendly UV-spectrophotometric method was successfully developed and validated for the simultaneous estimation of Tolperisone Hydrochloride and Etodolac. The method adheres to ICH guidelines and is suitable for routine quality control of combined dosage forms.

Keywords:
Tolperisone Hydrochloride, Etodolac, Sodium lauryl sulphate, Vierordt's method, Greenness evaluation

Online Oral Presentation 2 (OOP2)

Development of Four UV Spectrophotometric Methods for Simultaneous Estimation of Mirabegron and Silodosin Whiteness and Greenness Assessment

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Introduction: Four UV spectrophotometric methods were developed for the simultaneous estimation of mirabegron (MRB) and silodosin (SDS) in pharmaceutical tablet formulations. The methods included simultaneous equation (EQ), extended ratio subtraction (ERSM), absorption factor (AFM), area under curve (AUC), and third derivative (D3) techniques. **Methods:** The methods were validated according to ICH guidelines and showed good linearity, accuracy, precision, and specificity. The greenness of the methods was assessed using Complex GAPI, AGREE, and RGB tools, which demonstrated their eco-friendliness and sustainability. **Results:** The methods were successfully applied to the analysis of laboratory-prepared mixtures and commercial tablets containing MRB and SDS. Statistical analysis using one-way ANOVA showed no significant differences between the proposed methods and a published HPLC method. **Conclusion:** The developed UV spectrophotometric methods offer simple, rapid, sensitive, and environmentally friendly alternatives for the simultaneous estimation of MRB and SDS in pharmaceutical formulations, without the need for expensive instrumentation or extensive sample preparation.

Keywords:
Mirabegron, Silodosin, ecofriendly, UV Spectrophotometry, Analytical method validation

Online Oral Presentation 3 (OOP3)

Artificial Intelligence in Skin Cancer Diagnosis

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Abstract:
Introduction: Skin cancer is among the most common cancers globally, and early detection is crucial for improved prognosis. Deep learning models like convolution neural networks (CNNs) have been shown to be useful tools for evaluating skin lesions based on derma scopic and clinical photographs. A number of AI-based smart phone apps promise to give consumers access to rapid, simple, and affordable pre-diagnosis features. Laboratory accuracy and actual clinical performance remain a wide gap, nonetheless. While some AI technologies perform better than dermatologists in controlled settings, their capabilities and limitations in real-world practice are unknown. **Methods:** This paper offers an extensive review of peer-reviewed literature and publicly accessible AI tools for diagnosis of skin cancer, such as Using existing datasets (e.g., HAM10000, ISIC), we measure AI performance against that of human dermatologists. Analysis of public-use smart phone apps (e.g., Skin Vision, Mole Scope). Research was examined in three main contexts: Mobile diagnostic tools are used by consumers. General practitioners (GPs) are aided by AI triage tools. Dermatologists are adopting AI as a diagnostic aid. The research is centered on practical application and constraints in existing deployment methods.
Results: AI systems perform as well as or better than general practitioners' diagnostic accuracy and are comparable to dermatologists' performance in image-based assessment. Mobile applications are promising but yield inconsistent results based on variations in image quality, lighting, and interaction by users.AI systems work best when integrated with health care providers. Large-scale real-world studies of mobile AI solutions across diverse populations in uncontrolled environments are rare. Regulatory, ethical and clinical and usability factors are not yet explored. **Conclusion:** While AI presents a promising tool for **early skin cancer detection**, especially through mobile platforms, it **cannot yet replace clinical judgment**. The optimal path forward is a **hybrid model**, where AI supports but does not replace clinicians. Widespread, unsupervised use of mobile diagnostic apps may lead to **false reassurance or unnecessary anxiety**. Therefore, further research, real-world validation, and robust clinical integration strategies are essential before mobile apps can be confidently viewed as "the future doctor."

Keywords:
Artificial Intelligence, Clinical decision support, Dermoscopy, Early diagnosis, Melanoma detection, Skin cancer.

Online Oral Presentation 4 (OOP4)

Artificial Intelligence in Medical Imaging of the Breast Cancer

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Abstract:
Introduction: Breast cancer is the most generally diagnosed cancer in women globally, posing a serious threat to their mental and physical well-being. Early detection with imaging modalities such as mammography, ultrasonography and MRI significantly improves prognosis. In recent years, Artificial Intelligence (AI), namely machine learning and deep learning approaches, has emerged as a valuable tool in medical imaging. AI improves diagnostic accuracy, decreases human error and supports radiologists with lesion recognition, classification and risk assessment. This research investigates the use of AI in breast imaging, highlighting its uses, benefits and problems in improving early breast cancer diagnosis and clinical decision-making. **Method:** This was conducted to evaluate the role of artificial intelligence (AI) in breast medical imaging. Studies were selected based on relevance, originality, and scientific rigor. Data were synthesized to summarize current AI technologies, their diagnostic performance, and their implications in breast cancer imaging. **Results:** Artificial intelligence (AI) has demonstrated significant value in breast imaging across multiple modalities, including mammography, ultrasound, and magnetic resonance imaging (MRI). In mammography, AI models such as convolutional neural networks (CNNs) achieved high accuracy in mass detection, microcalcification classification, and breast density assessment, with reported accuracies reaching up to 98%. In ultrasound imaging, AI-assisted computer-aided diagnosis (CAD) systems improved lesion segmentation and classification, achieving diagnostic accuracy comparable to experienced radiologists. Deep learning models enhanced performance in distinguishing benign from malignant lesions and supported decision-making using BI-RADS categorization. For MRI, AI tools facilitated lesion detection, characterization, and cancer risk prediction, with several studies reporting area under the curve (AUC) values above 90%. Additionally, AI algorithms contributed to image quality enhancement, reducing noise and improving lesion visibility. Collectively, these applications reduced radiologist workload, improved diagnostic consistency, and supported early breast cancer detection. **Conclusion:** Artificial intelligence has emerged as a transformative tool in breast medical imaging, offering enhanced accuracy, efficiency, and consistency in diagnosis. Through applications in mammography, ultrasound, and MRI, AI supports lesion detection, classification, risk assessment, and image quality improvement. It reduces radiologist workload and minimizes diagnostic errors, particularly in early breast cancer screening. Despite its promise, challenges such as limited datasets, high-quality image requirements, and generalizability remain. Continued research and technological refinement are essential for broader clinical integration. Overall, AI holds great potential to revolutionize breast cancer diagnosis and improve patient outcomes through earlier and more precise detection.

Keywords:
Artificial intelligence, machine learning, breast cancer, mammography, MRI.

Online Oral Presentation 5 (OOP5)

Neuroprotective Potential of Gambogenic Acid By Nrf2 Upregulation Against Oxidative Stress In Alzheimer's Disease

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ABSTRACT:
Alzheimer disease is a complex neurodegenerative disorder. It can be described as a familiar form of dementia in the older population. The etiology of the disease is said to be multi-factorial seen with the accumulation of amyloid β plaques and NFT. This causes mitochondrial dysfunction and finally oxidative stress. In this study, neuroprotective effect of Gambogenic acid against H_2O_2 -induced death was studied in differentiated N2A Cells. There was a reduction in the toxicity which was induced in the N2A cells by treatment with H_2O_2 by Gambogenic acid. The nuclear factor erythroid 2-related factor 2 (Nrf2) plays a major role in the regulation of resistance against oxidants. It is involved in the induced expression of antioxidant response element dependent genes. Further, we demonstrated that Gambogenic acid protects neurons through upregulation of Nrf2 pathway. Moreover, reactive oxygen species and mitochondrial membrane potential loss formed by H_2O_2 was attenuated by Gambogenic acid. Thus, Gambogenic acid can be employed as a therapeutic agent for Alzheimer disease.

Keywords:
Gambogenic acid, Garcinia, Oxidative stress, Neuroprotection, Nrf2

Online Oral Presentation 6 (OOP6)

Development and Pharmacological Investigation of Silk Fibroin Based Therapeutics for Diabetic Wound Healing

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ABSTRACT:
Introduction: Diabetic wounds are a significant clinical challenge due to delayed healing, high infection risk, and increased morbidity. The fibroin protein from silkworm silk has emerged as a promising biomaterial owing to its excellent biocompatibility, biodegradability, and wound-healing potential. This study aimed to develop and evaluate fibroin-based electrospun nanofiber mats loaded with therapeutic agents for enhanced diabetic wound healing. M**ethods:** Silk fibroin was extracted from *Bombyx mori* cocoons, blended with polycaprolactone (PCL), and fabricated into electrospun nanofibers. These were incorporated with therapeutics and characterized using SEM, FTIR, TGA, and XRD analyses. In vitro toxicity was assessed via MTT and direct contact assays on NIH3T3 cells. In vivo wound healing efficacy was evaluated in STZ-induced diabetic rats by measuring wound contraction, histopathological analysis, and Western blotting of relevant proteins. **Results:** Characterization confirmed the structural integrity and successful incorporation of fibroin in the nanofibers. Treated groups exhibited significantly higher wound contraction rates and reduced inflammation. Western blot analysis revealed upregulated collagen and VEGF expression. Histology confirmed accelerated tissue regeneration with enhanced re-epithelialization and angiogenesis in treated wounds compared to controls. **Conclusion:** Silk fibroin-based nanofiber mats show considerable promise as bioactive wound dressings for diabetic wounds. Their physicochemical properties, combined with therapeutic loading, contribute to enhanced healing outcomes. This approach offers a biocompatible and effective strategy for chronic wound management.

Keywords:
Silk Fibroin, Electrospinning, Diabetic Wound, Nanofiber, Wound Healing

Online Oral Presentation 7 (OPP7)

Integrative *In-silico* Analysis of Phenolic acids: Pharmacokinetics, Toxicity, Molecular docking and Molecular Dynamics Analysis against Anti-cholelithiatic activity

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ABSTRACT:
Objective: Cholelithiasis is one of the most prevalent gastroenterological diseases and is characterized by the formation of gallstones in the gallbladder. Over 90 % of symptomatic patients undergoing cholecystectomy. Hence this study showcases on evaluating the phenolic acids against anti-cholelithiatic activity through a computational approach. **Methods:** The pharmacokinetic profiles of selected phenolic acids were analyzed using computational tools such as SwissADME tool. Toxicity evaluations were analysed using Osiris molecular property explorer Which includes mutagenicity, carcinogenicity, and organ-specific toxicity, in order to determine safety. Molecular docking was performed to identify interactions with gallstone-related protein targets such as FXR, LXR, PPAR-γ, NPC1-L1. Molecular dynamics simulations were used to validate the stability and binding efficacy of phenolic acid-protein complexes under physiological conditions with the highest binding affinity compound. **Results:** Phenolic acids demonstrated favorable pharmacokinetics, meeting drug-likeness criteria with minimal toxicity risks. Molecular docking revealed strong interactions with key targets against standard drug involved in gallstone formation. Molecular dynamics simulations confirmed the stability and robust binding of ligand-protein complexes over the simulation period. Among the phenolic acids studied, certain compounds exhibited superior binding affinities and interaction profiles, suggesting their potential as anti-cholelithiatic agents. **Conclusion:** This integrative in silico investigation highlights the potential of phenolic acids as candidates for the management of cholelithiasis. The study provides a foundation for experimental validation and further exploration of phenolic acids in pre-clinical studies such as *In-Vitro*, *In-Vivo* studies against anti-cholelithiatic activity is essential.

Key words:
Pharmacokinetic, Toxicity, Molecular Docking, Molecular Dynamic, Cholelithiasis.

Online Oral Presentation 8 (OOP8)

Enhancing Bioavailability of Phytobioactives using Nanobelt like particles incorporated tablet formulations

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ABSTRACT:
Introduction: Quercetin and Resveratrol are bioactive polyphenols with significant therapeutic potential, but their low aqueous solubility and stability limit their bioavailability. This research aimed to overcome these limitations by developing carrier-free nanobelt-like particles of quercetin and resveratrol (QRNBPs) and integrating them into tablet formulations. **Methods:** A green solvent/non-solvent physicochemical method was used to formulate QRNBPs. The particles were characterized by XRD and SEM. These QRNBPs were then incorporated into tablet formulations, and physicochemical interactions with excipients were analysed using FTIR. Tablets were prepared using the direct compression method and evaluated for average weight, hardness, content uniformity, friability, drug content, disintegration time, and dissolution rate. **Results:** The optimized tablet formulation (F4) demonstrated desirable characteristics, including a hardness of 100 N, disintegration time of 45 seconds, and cumulative drug release of not less than 98% in 45 minutes. Comparative dissolution studies revealed that tablets loaded with QRNBPs had a twofold increase in the dissolution rate compared to capsules containing pure bioactive compounds. **Conclusion:** The study successfully developed a green method to formulate QRNBPs, which were effectively integrated into tablet formulations. The optimized tablets showed improved disintegration and dissolution profiles, suggesting enhanced bioavailability of quercetin and resveratrol.

Online Oral Presentation 9 (OOP9)

Study The Effect of Imeglimin HCL on SH-SY5Y Cell Line for The Management of Alzheimer's Disease

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ABSTRACT:

Alzheimer's disease (AD) is a progressive neurodegenerative disorder characterized by amyloid-beta plaque accumulation, tau protein hyperphosphorylation, and elevated oxidative stress, leading to cognitive decline and neuronal death. This study explores the **neuroprotective potential of Imeglimin hydrochloride**, a novel antidiabetic agent, for its application in AD therapy. In-silico molecular docking revealed that Imeglimin binds effectively to critical AD-related targets, particularly the **GABA-A** and **M2 muscarinic acetylcholine receptors**, indicating its potential to modulate neurotransmission pathways. ADME profiling confirmed its ability to cross the **blood-brain barrier**, supporting its central nervous system activity. In-vitro assays using **SH-SY5Y neuronal cell lines** demonstrated that Imeglimin significantly reduced reactive oxygen species (ROS) at non-toxic concentrations, with the most potent effect observed at **6.25 µg/mL.** The **MTT assay** confirmed dose-dependent cytotoxicity, and **ROS assays** supported its antioxidant role. These findings suggest that Imeglimin not only improves mitochondrial function but also mitigates oxidative stress, which is a hallmark of AD pathology. Given its dual role in enhancing neuronal viability and reducing oxidative damage, Imeglimin presents itself as a **promising neuroprotective candidate** for AD treatment. Further **in-vivo** and **clinical studies** are recommended to evaluate its long-term safety and therapeutic efficacy.

Keywords:

Imeglimin hydrochloride, SH-SY5Y, Cytotoxicity, IN-silico, In-vitro

Online Oral Presentation 10 (OPP10)

Evaluation of Anti-Convulsant Activity of Olivetol Nanoparticle on PTZ Induced Seizure Rodent Model Through JNK Signalling

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ABSTRACT:
Introduction: Epilepsy is a chronic neurological disorder characterized by recurrent seizures due to abnormal neuronal excitability and hypersynchrony. Despite the availability of various anti-epileptic drugs (AEDs), their limited efficacy and adverse effects necessitate the exploration of novel therapeutic strategies. Olivetol, a naturally occurring resorcinolic compound with known neuroprotective and anti-inflammatory properties, was evaluated for its anticonvulsant efficacy in this study. **Methods:** Utilizing both zebrafish and PTZ-induced Wistar rat models, the anticonvulsant potential of Olivetol and its nanoparticle formulation was assessed. In silico molecular docking studies identified strong binding affinity of Olivetol with the MAPK receptor, suggesting modulation of the JNK signaling pathway. **Results:** In vivo, Olivetol significantly increased seizure latency and reduced convulsion duration, particularly at lower doses. Notably, ELISA results revealed a marked reduction in hippocampal JNK1 levels, and histopathological analysis demonstrated decreased neuronal degeneration in Olivetol-treated groups. The nanoparticle formulation showed promising efficacy, enhancing bioavailability and CNS penetration. **Conclusion:** These findings suggest that Olivetol, especially in nanoparticle form, could serve as a potential therapeutic agent in epilepsy management via JNK pathway modulation. Further mechanistic studies are warranted to validate its clinical applicability.

Keywords:
Anti-convulsant, Pentylene tetrazole, zebrafish, MAPK

Online Oral Presentation 11 (OOP11)

Fabrication, Optimization and Physiochemical Characterization of Olivetol-Loaded Bigel For Enhanced Drug Delivery

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ABSTRACT:
Introduction and Background: This present study focuses on the formulation of olivetol-incorporated bigel. Bigel is one of the novel topical drug delivery systems containing a biphasic system. They possess the benefits of both hydrogel and organogel. Olivetol is a naturally and synthetically obtained organic compound. It is obtained as a white crystal or an olive to light purple waxy solid. It has a wide range of applications in sectors like nutrition, medicine, agriculture, and cosmetics. **Materials and Methods:** Hydrogel and organogel are prepared separately. Hydrogel is prepared using Carbopol 940, whereas organogel consists of Tween 80 and almond oil. Bigel is formulated by combining hydrogel and organogel in predetermined ratios. Three different bigels were designed and named F1, F2, F3, F4 and F5. The prepared bigel were evaluated based on spreadability, extrudability, pH, viscosity and Fourier transform infrared spectroscopy. **Results:** Based on the established evaluating parameters, formulation F2, among all other formulations, displayed an efficient outcome and was considered the optimised formulation. **Conclusions:** F2 bigel was considered highly stable. The developed bigel exhibited the potential to be a semisolid vehicle for topical application and displayed moisturising properties.

Keywords:
Bigel, hydrogel, organogel, olivetol, Carbopol, tween 80

Online Oral Presentation 12 (OOP12)

Evaluation of Wound Healing Efficacy of Hydrogel Formulation of Suberohydroxamic Acid Using Adult Zebrafish Model

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ABSTRACT:
Introduction and Background: The research focuses on evaluating the wound healing efficacy of Suberohydroxamic acid hydrogel using the zebrafish caudal fin transection model. The study emphasizes the complex process of wound healing and explores hydrogel as a transdermal formulation for enhanced delivery and effectiveness. **Materials and Methods:** Formulation of transdermal hydrogel using Suberohydroxamic acid were prepared and characterised. In-silico analysis is performed to predict molecular property, bioactive score, pharmacokinetics and toxicity studies in addition to that In-vivo studies is carried out using wound induced zebrafish using caudal tail fin regeneration method. **Results:** The in-silico analysis identified Suberohydroxamic acid as a promising drug candidate with significant docking scores against key inflammatory and repair-related proteins, including MMP9, NF-Kappa B, and VEGF receptors. Experimental hydrogel formulations were optimized through characterization of pH, spreadability, viscosity, and swelling properties. In vitro studies demonstrated effective drug release, with comparing the low, medium and high-dose which shows the finest hydrogel achieving superior release profiles. In vivo studies utilized zebrafish, a well-established model for studying tissue regeneration, with wounds induced by tail-fin transection. The study evaluated tail regeneration, histopathology, and neutrophil migration over 14 days. **Conclusions:** Results revealed that the Suberohydroxamic acid hydrogel significantly enhanced regeneration and reduced inflammation, supported by histopathological findings of reduced neutrophil infiltration and improved tissue formation. Which highlights the anti-inflammatory properties and targeted drug delivery through hydrogels.

Keywords:
Wound healing, zebrafish, hydrogel, suberohydroxamic acid.

Online Oral Presentation 13 (OOP13)

Leveraging Machine Learning for Real-Time Brain Stroke Severity Forecasting

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ABSTRACT:

Background: Brain stroke is a life-threatening condition characterized by a sudden interruption of blood flow to the brain, leading to cell death and long-term neurological impairments. Early prediction and classification of stroke severity are critical for timely intervention and improved clinical outcomes. Machine Learning (ML) offers a promising approach for automating stroke risk prediction using health data. **Objectives:** This study aims to develop and evaluate machine learning models to predict the severity of brain stroke using structured health data. The objectives include dataset acquisition, data pre-processing, model development, performance evaluation, and identification of the most accurate classification algorithm. **Methods:** Three open-source datasets related to stroke patients were collected from UCI and Kaggle platforms. The datasets included features such as age, gender, blood pressure, glucose levels, BMI, hypertension, heart disease, smoking status, and stroke history. Data pre-processing involved normalization, encoding categorical variables, and handling class imbalances using SMOTE. Five classification algorithms—Decision Tree, Gradient Boosting Classifier, Multilayer Perceptron, Support Vector Machine, and Stochastic Gradient Descent—were implemented using Python (scikit-learn). Models were evaluated using accuracy, precision, recall, F1 score, confusion matrix, and ROC-AUC metrics. **Results:** Among the five models, **Stochastic Gradient Descent (SGD)**, **Support Vector Machine (SVM)**, and **Multilayer Perceptron (MLP)** achieved the highest prediction accuracy (~96%) on Dataset 1. **Gradient Boosting Classifier** showed superior performance (97% accuracy) on the multiclass Dataset 3. The weighted voting ensemble model, combining predictions from top-performing classifiers, achieved the highest overall accuracy, nearing **97%**. **Conclusion:** The findings demonstrate that ML models, especially ensemble methods, can accurately predict stroke severity using health indicators. Incorporating features like age, hypertension, heart disease, glucose level, BMI, and smoking habits significantly improves model performance. Future enhancements may include the integration of deep learning models and imaging data (MRI/CT) for more comprehensive stroke prediction.

Keywords:

Stroke prediction, Machine learning, Brain stroke, Classification algorithms, Stochastic Gradient Descent, Support Vector Machine, Gradient Boosting, Multilayer Perceptron, Ensemble learning

Online Oral Presentation 14 (OOP14)

Evaluating The Antiepileptic Efficacy Of *Salicylhydroxamic Acid*: A Comprehensive Genomic, *In Silico*, And *In Vivo* Study Using PTZ-Induced Adult Zebrafish Model

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ABSTRACT:

Epilepsy affects over 50 million people worldwide; it is a chronic neurological disorder affecting the electrical activity of the brain. There are multiple innovative advancements in the technologies for the treatment of epilepsy, but the drug resistance and side effects remain significant challenges. This study aims to determine the potential therapeutic efficacy of Salicylhydroxamic acid as an antiepileptic candidate through genomic profiling, in silico molecular docking, pharmacokinetic analysis, and in vivo experiments using a PTZ-induced zebrafish model. The role of genetics data plays an important role in the treatment of epilepsy; therefore, the genomic analysis of epilepsy-related datasets was identified through Gene Expression Omnibus (GEO). The Geo database helped to explore the differentially expressed gene linked to neurotransmitter regulation and histone deacetylase (HDAC) pathways. In silico study used the molecular docking tools (AutoDock, Avogadro, Molegro Molecular Viewer) that revealed the binding interaction of Salicylhydroxamic acid with epilepsy associated receptors such as NMDA, HDAC, and GABA, suggesting its potential as an anticonvulsant activity. Pharmacokinetics prediction (SwissADME) confirmed good drug-likeness, blood-brain barrier permeability, and minimal toxicity risks. The in vivo analysis demonstrated the efficacy of Salicylhydroxamic acid using a PTZ-induced adult zebrafish model. The zebrafish were assessed on the three parameters. The behavioural analysis displayed the dose-dependent reduction in seizure severity. The histopathological and RT-PCR studies confirmed decreased neuronal damage and HDAC-associated gene expression changes. Hence it can be concluded that Salicylhydroxamic acid could be potential as a novel therapeutic candidate for treating epilepsy. This study further suggests that future clinical investigations are required to explore the potency of Salicylhydroxamic acid.

Keywords:

Epilepsy, Gene Expression Omnibus (GEO), HDAC, PTZ-induced zebrafish model, Neuroprotection.

Online Oral Presentation 15 (OOP15)

Evaluation of Salivary Dopamine and Ghrelin Levels in E-Gamers

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ABSTRACT:
Introduction: As digital devices like computers and smartphones become more widely available around the world, there is a growing need to understand the influence of this sedentary activity in humans. The domain of online gaming addiction is a relatively new phenomenon with disparate studies examining various facets of it. Similar to drug use, excessive use of e-gaming can change dopamine (DA) and ghrelin (Ghr) functions in ways that promote the development and persistence of addiction. Among the neurotransmitters involved in addiction, DA is clearly the best-known biomarker and its critical role in addiction is supported by converging evidence gathered over the past 40 years. However, its connection to reward system and addiction *via* the hunger hormone Ghr is a recent breakthrough in the research world. **Methods:** The main objective of this study was to compare the salivary levels of dopamine and ghrelin between e-gamers and controls. The secondary objective, investigated the association of these biomarker levels with other gaming factors such as age, sleep hours, gaming hours, period of gaming and type of gamers (addicted/non-addicted). A total of 80 male participants (54 gamers and 26 controls) between 18-35 years were recruited. The gamers were classified as pathological, excessive and normal via the Gaming Addiction Scale (GAS). ELISA kits for human dopamine and ghrelin were used to determine the levels of these biomarkers in salivary samples. The concentrations of DA and ghrelin calculated were then analyzed against each parameter by SPSS® software version 22 using Analysis of variance (ANOVA), following by post-hoc test, LSD's test to examine the significant differences of each group. **Results:** The DA levels were significantly (p=.005) higher in the pathological/addicted gamers as compared to excessive and normal e-gamers, while the Ghr levels were significantly elevated in long-term gamers (>60 months) compared to those within a year. Ghr levels were also elevated in the controls compared to the 0–6-month gamers. No significant correlation between the salivary levels of DA and Ghrelin (Ghr) with one another neither with age, sleep hours, gaming hours, period of gaming (except with Ghr) nor gaming status was seen. **Conclusion:** The study was able to strengthen the literature proving the connection of DA in e-gaming addiction. Future studies with clinically relevant groups using other biological samples representing the brain Ghr levels are recommended for a conclusive link between Ghrelin and gaming addiction.

Keywords:
Dopamine, Ghrelin, e-gamers, addiction, reward circuit

Online Oral Presentation 16 (OOP16)

Genomics in Practice: Advancing Personalized Medicine through Policy, Technology, and Clinical Integration

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ABSTRACT:

Introduction: Personalized medicine (PM) is a transformative healthcare approach that uses an individual's genetic makeup to guide disease prevention, diagnosis, and treatment. Building on data from the Human Genome Project, PM utilizes genetic profiles to understand variations in drug responses and disease risk. It combines molecular biology, advanced technologies, and interdisciplinary collaboration to provide tailored healthcare strategies. ***Objective:*** This study aims to explore the role of personal genomics and consumer genetic testing in PM. It also focuses on key policy frameworks, including the Genetic Information Non-discrimination Act (GINA) of 2008 and evolving healthcare reimbursement models that support the implementation of PM. ***Methods:*** A comprehensive literature review was conducted to analyze technological, clinical, and regulatory developments in PM. Case studies from hospitals integrating genomics into routine care were examined. Emphasis was placed on next-generation sequencing (NGS), the use of health information technology (HIT) for genetic data management, and international biobank collaborations. Relevant policies and ethical guidelines promoting genetic data protection were also reviewed. ***Results:*** The review revealed that PM adoption is driven by advances in NGS, HIT, and collaborative biobanking efforts. Institutions implementing PM reported improved patient outcomes and precision in treatment planning. Policies like GINA have played a crucial role in addressing ethical and legal concerns, fostering a supportive environment for genetic data use. ***Conclusion:*** Personalized medicine is reshaping healthcare by enabling customized treatments based on genetic information. Technological innovations, supportive policies, and successful healthcare models are accelerating its integration into clinical practice, promising enhanced patient-centered outcomes.

Keywords:
Personalized Medicine, Genomics, Health Information Technology (HIT), Genetic Testing, Precision Healthcare.

Online Oral Presentation 17 (OOP17)

A review on the risk of SARS-CoV-2 infection in cancer patients post COVID vaccination and an outbreak in nanovaccinology

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ABSTRACT:
Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) has affected more than 600 million people worldwide, leading the World Health Organization (WHO) to declare a pandemic. Patients living with cancer are at a significantly increased risk of morbidity and mortality after infection with SARS-CoV-2 and variants. It can differ by cancer type, the vaccine dose neutralizing response against SARS-CoV-2 in patients with cancer was blunted, especially in patients with B-cell derived hematologic malignancies that failed to produce protective levels of anti-spike antibodies or T-cells in response to SARS-CoV-2 vaccination. The reason behind this is Bruton Tyrosine Kinase Inhibitor (BTKi), Anti-CD20 targeted cancer therapy, and Anti-CD20 monoclonal antibodies (mAbs) were also significantly associated with poor seroconversion and associated with a decreased humoral response which is around 80% are patients with hematological cancer patients who were not receiving cancer treatment at the time of vaccination but had received treatment before vaccination also had significantly lower rates of response. The use of nanotechnology in vaccinology is providing the opportunity to contrast these difficulties and develop effective vaccines. This review highlights the risk of SARS-CoV-2 infection in cancer patients after the vaccine and recent advances in nanovaccinology paving the way towards reducing the virus's pathogenic efficiency in cancerous patients and other immunocompromised individuals.

KEYWORDS:
Covid-19, Neoplasm, antiCD20mAbs, Seroconversion.

Online Oral Presentation 18 (OPP18)

Wearable Technology in Medication Adherence: A Comprehensive Review of Global, Opportunities and Challenges

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ABSTRACT:
Background: Medication adherence is essential for achieving optimal disease control, yet non-adherence persists as a widespread challenge across healthcare systems. Emerging wearable technologies including biosensors, sensor-based patches, and smartwatches - offer new avenues to promote adherence through enhanced patient engagement and real-time monitoring. ***Objective:*** This systematic review examines recent global evidence on the effectiveness of wearable technologies in improving medication adherence, highlighting both opportunities and challenges in their implementation. ***Methods:*** A comprehensive analysis of international studies was conducted to evaluate the impact of various wearable devices on adherence outcomes. The review also explores integration with mobile health applications and the potential to support personalized, patient-centered interventions. ***Results:*** Wearable technologies provide significant opportunities by enabling continuous adherence monitoring, detecting deviations from prescribed regimens, and facilitating active patient involvement. Their integration with healthcare systems empowers providers to manage chronic conditions more effectively. However, several barriers hinder widespread adoption. Technical limitations (battery life, user comfort, data quality), privacy concerns, regulatory variability, and inequities in technology access—particularly in low-resource settings—pose substantial challenges. Moreover, current evidence does not conclusively demonstrate long-term clinical benefits of these interventions. ***Conclusion:*** To maximize the potential of wearable technology in addressing medication non-adherence, interdisciplinary collaboration, culturally sensitive implementation, and standardized evaluation metrics are essential. This review offers a global perspective and practical blueprint to guide future adoption and research, ultimately aiming to improve patient outcomes and healthcare delivery.

Keywords:

Wearable technology, Mobile health (mhealth), Patient engagement, Medication adherence.

Online Oral Presentation 19 (OOP19)

Computational Investigation of Nonadenoic Acid Against Neuroinflammation

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ABSTRACT:
Background: Neuroinflammation is a complex process that involves the activation of immune cells in the nervous system and has been implicated in various neurodegenerative diseases. Currently available treatment focuses on providing adjuvant therapy rather than giving exact remedy form the condition. Hence, there is a necessity for the search of a compound with multi-target potential against neuroinflammation. The current work aims at the *insilico* evaluation of nonadecanoic acid as a therapeutic option against neuroinflammation. **Methods:** In-silico docking studies were performed using PyRx Autodock Vina software. The selected targets such as NF-kB (Nuclear factor – kappa light chain enhancer of B cells), TNF-α (Tumor necrosis factor – α), Tau, IL-1β, IL-6 (Interleukin), Amyloid-β, COX-1, COX-2 (Cyclo-oxygenase – 1 & 2) with the selected ligand nonadecanoic acid. The pharmacokinetic property of the selected ligand was calculated using Molinspiration software and Swiss ADME web tool. **Results:** The docking results indicated that the selected ligand has good binding affinity towards the selected targets (PDB ID: 1SVC, 2AZ5, 6NK4, 6Y8M, 1P9M, 1AMB, 3KK6, 3HS5). The molecular properties and bioactivity score evaluated using Molinspiration software also indicated the druglikeness nature of the selected compound nonadecanoic acid. This was further supported by the pharmacokinetic results using Swiss ADME which indicated the blood brain barrier permeability of the compound. **Conclusion:** These findings provide a baseline information for the further exploration of the potential therapeutic significance of Nonadecanoic acid in mitigating neuroinflammatory responses, paving way for future investigation and the development of therapeutic agent for neurological disorders.

Keywords:

Neuroinflammation, NF-kB, TNF-α, Nonadecanoic acid, COX-1, COX-2.

Online Oral Presentation 20 (OOP20)

A critique on Genetic mutations in Neurodegeneration Associated with Brain Iron Build-Up

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ABSTRACT:

Neurodegeneration with brain iron accumulation (NBIA) is a rarest neurological that has been passed down via families through genetics. The disease is characterised by accumulation of excess or abnormal amount of iron in basal ganglia of the brain. The mechanism of iron accumulation occurs mostly in substantia nigra and/or globus pallidus. The cortex and cerebellar part of the brain can be affected and cerebellar involvement is compatible with most of the subtypes of NBIA. In this disease the patient mainly experienced with movemental problems which includes symptoms of dementia, difficulty of swallowing and speaking, dystonia, seizures, tremors, weakness, writhing movements, toe walking and loss of vision such as retinitis pigmentosa. Onset of disease ranges from childhood to adulthood. Magnetic resonance imaging (MRI) has proven as right source to observe the disease progression in brain. Totally 10 types of NBIA have been recognised and each type is caused due to the defect in specific gene. 13 genes have been associated and they exhibit autosomal recessive character. Some of the genes or genetic type that cause NBIA are PKAN, PLAN, MPAN, BPAN, FAHN along with kufor-rakeb syndrome, neuroferritinopathy, aceruloplasminemia, woodhouse sakati syndrome and CoPAN. No treatment is available for this disease nevertheless, drug discovery and development is needed to manage NBIA-affected patient's health.

Keywords:

NBIA, genes, basal ganglia, iron, brain, neurodegeneration.

Online Oral Presentation 21 (OOP21)

Natural polyphenols: a promising preventive and therapeutic measure for Alzheimer's disease

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Abstract:
There were over 50 million people with dementia in 2017, and that number is anticipated to triple by 2050, according to Alzheimer's Disease International (ADI). The causes and pathological mechanism of Alzheimer's disease (AD) remain unknown despite decades of study. Not only that, but other promising preclinical outcomes have failed to materialize in therapy for actual patients. Many of the naturally occurring phytochemicals in plants are polyphenols, and these compounds are found in the highest concentrations in the foods we eat daily. Because of their antioxidant capacity and their ability to scavenge the free radicals formed during the pathological process, polyphenols have garnered a lot of attention from the scientific community as a potential weapon against Alzheimer disease and other neurodegenerative disorders. In recent years, many studies have been reported unravelling the molecular mechanisms and the specific interactions of selected polyphenols such as Quercetin, Curcumin, Apigenin, Naringenin, Resveratrol, etc., with their targets in the disease pathway. This review focuses on the therapeutic potential and promising role of dietary polyphenols as nutraceuticals to combat AD.

Keywords: Alzheimer disease, Apigenin, Resveratrol, Polyphenols.

Online Oral Presentation 22 (OOP22)

NEUROPROTECTIVE POTENTIAL OF NOVEL RESVERATROL SURROGATE MOLECULE (RSM5) AS A THERAPEUTIC AGENT FOR ALZHEIMER'S DISEASE – INVITRO EVIDENCE

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Abstract:
Background: Alzheimer's disease (AD) significantly impairs the affected person's ability to carry out daily tasks. AD is a type of neurodegenerative illness that progresses over time and mostly affects the brain. AD affects millions of people worldwide, and its prevalence is expected to increase as the population ages. According to the World Health Organization, 60-70% of dementia cases are caused by AD, which Affects an estimated 50 million people globally. **Methods:** New synthetic routes for Resveratrol Surrogate Molecule (RSM) 1–6 were developed, and the compounds were characterized by spectral methods. Invitro methods such as MTT assay, Dual cholinesterase assay, DPPH assay, Autophagy flux assay, ELISA, and qRT-PCR were employed in this study. **Results:** Among the six compounds, the compound RSM5 has shown substantial cell viability profile, dual cholinesterase activity, antioxidant effect, autophagy induction, and inhibition of amyloid beta levels and downregulation of mTOR along with upregulation of LC3B gene. **Conclusion:** In summary, this study has shed light on the steps involved in the synthesis of a novel molecule (Resveratrol Surrogate Molecule 5) and evaluating its anti-Alzheimer potential as a dual cholinesterase inhibitor, and autophagy stimulator. Our investigation shows that the designed and synthesized compounds (RSM1-6) have AChE and/or BChE inhibitory activity. Among all, compound RSM5 showed the strongest inhibitory impact on both AChE and BChE. Also, this study underscores the improved bioavailability and efficacy of RSM5 compared to parent compound Resveratrol. Hence compound RSM5 could be a promising therapeutic agent against Alzheimer's disease. Further preclinical and clinical studies are warranted to completely assess its long-term safety and efficacy in human populations.

Keywords:

Resveratrol Surrogate Molecule, MTOR, Autophagy, Alzheimer's disease.

Online Oral Presentation 23 (OOP23)

SPERM PROTEOMICS: A POTENTIAL IMPACT ON TREATMENT OF MALE INFERTILITY

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Abstract:
Spermatozoa are unique cells that have highly compact DNA, motility (and hypermotility) patterns, a specific morphology, localized mitochondria, and an apical acrosome. They are the product of a dynamic process termed spermatogenesis. A total of 1139 proteins were identified l normozoospermic fertile and 1095 infertile men, respectively. The proteins associated with reproductive system development and function and the ubiquitination pathway were under-expressed in normozoospermic infertile men. The global proteomic profile of normozoospermic infertile men is different from that of normozoospermic fertile men. Western blot analysis revealed the overexpression of annexin A2 (ANXA2) and downexpression of sperm surface protein Sp17 (SPA17) and serine protease inhibitor (SERPINA5) in men with unexplained male infertility (UMI). A body of scientific investigations suggests that SPA17, ANXA2, and SERPINA5 may potentially serve as non-invasive protein biomarkers associated with the fertilization process of the spermatozoa in UMI. In addition, sperm exhibits several post-translational modifications fundamental to their function, such as SUMOylation and ubiquitination. In this review, a detailed discussion of the current knowledge of the sperm proteome in terms of its composition and the function that these proteins determine, as well as their post-translational modifications and how these alter sperm functional integrity. Thus, we conclude that further exploration of sperm proteomics can benefit humankind in overcoming the reasons behind male infertility and also help in improving the performance and quality of sperm.

Keywords:
Spermatozoa, Normozoospermia, Annexin A2, Surface protein Sp17, Serine Protease, Unexplained Male infertility.

Online Oral Presentation 24 (OOP24)

POST COVID AND VACCINATION INDUCED THROMBOCYTOPENIA - A SERIOUS HEALTH THREAT

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Abstract:
Coronavirus disease (COVID-19), the illness brought on by the severe acute respiratory syndrome coronavirus 2, continues to have a substantial impact on morbidity and death around the globe, with numerous countries experiencing repeated outbreaks of this viral disease. Post COVID thrombocytopenia and vaccine induced immune thrombotic thrombocytopenia (VITT) (also termed thrombosis with thrombocytopenia syndrome). Currently available different types of vaccines for COVID, as well as COVID infection have been linked to cause thrombocytopenia. A growing body of scientific evidence reveals that the immunity of the individual plays a pivotal role in this pathophysiological process. About 79% of people who experience thrombocytopenia following vaccinations have antibodies against platelet factor 4 (PF4) found on their platelets. Consequently, immunological thrombocytopenia may be the proper term. Some research investigations on VITT reveal that people have high titre IgG antibodies against platelet factor 4 (PF4), a substance that is contained in platelet granules and released during platelet activation. PF4 is most likely a component of our innate immune system's defence. This cationic molecule attaches to and opsonizes polyanionic surfaces of pathogens to make it easier for pre-existing B cells to create anti-PF4 antibodies. Persons administered with COVID vaccine, experience severe fatigue due to immune thrombocytopenic purpura (ITP) which sometimes can result in mortality and the unfavourable impact of intended therapy. This is an important pathology to comprehend in the context of increased worldwide immunization efforts. Our study aims to raise doctors' awareness of the importance of excluding this condition when assessing patients who have thrombocytopenia after receiving the anti-SARS-CoV-2 vaccine and highlights the importance of getting vaccinated with the desired choice of COVID vaccine to stay away from this serious awakening health threat.

Keywords:
COVID vaccine, Post COVID thrombocytopenia, Platelet activation factor,

Online Oral Presentation 25 (OOP25)

Patho-immunological aspects of Chronic Venous Insufficiency

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ABSTRACT:
The term chronic venous insufficiency (CVI) describes a condition that affects the venous system of the lower extremities with venous hypertension causing various pathologies including pain, swelling, edema, skin changes, and ulcerations. Chronic venous disease is a potentially prevalent and debilitating condition affecting millions of individuals, mostly in the Western world. In chronic venous insufficiency (CVI), various immune cells participate in pathogenesis by contributing to inflammation and tissue damage. Neutrophils are among the first responders to inflammation, releasing cytokines and reactive oxygen species (ROS) that contribute to tissue damage in CVI. Macrophages play a dual role. Initially, they help in clearing debris and initiating tissue repair. However, persistent activation can lead to prolonged inflammation and tissue damage. T lymphocytes like CD4+ T helper cells and CD8+ cytotoxic T cells participate in CVI by releasing pro-inflammatory cytokines and inducing tissue damage. Mast cells release inflammatory mediators that contribute to increased vascular permeability and exacerbate tissue damage in CVI. While not classically immune cells, endothelial cell dysfunction contributes significantly to the immune response in CVI by releasing inflammatory molecules and adhesion factors, promoting immune cell recruitment. These immune cells interact in a complex manner, contributing to the chronic inflammation and tissue remodeling seen in CVI. Understanding their roles helps in exploring potential therapeutic interventions targeting the immune response in this condition.

KEYWORDS:

CVI, Neutrophils, Macrophages, Mast cells, T lymphocytes.

Online Oral Presentation 26 (OOP26)

A Review On Diabetes Mellitus and Autoimmunity In Patient With Congenital Rubella Syndrome

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Abstract:
Incidences of insulin-dependent diabetes mellitus (IDDM) are higher in individuals with congenital rubella syndrome (CRS). Therefore, studies focusing on children with CRS are crucial for tracking the development of IDDM in this vulnerable population. Research indicates that approximately 30% of all children with CRS also have diabetes. However, only 20.2% of patients with CRS exhibit pancreatic islet cell cytotoxic or surface antibodies (ICSA), even though these antibodies are found in 50-80% of patients with glucose-related issues. These factors can lead to beta cell death by degrading DNA and increasing the activity of poly-ADP-ribose synthetase, an enzyme that depletes nicotinamide adenine dinucleotide in beta cells. Additionally, they may alter the endogenous scavengers of reactive species, produce oxygen free radicals, inhibit active calcium transport, and modify calmodulin-activated protein kinase activity. This review aims to outline potential mechanisms involved while emphasizing the therapeutic value of studying CRS. To fully understand the cross-linking mechanisms and to develop effective treatments for this condition, further research on CRS and diabetes mellitus is necessary.

Keywords:

Congenital rubella syndrome, Insulin dependent Diabetes Mellitus, Islet Cell cytotoxic, Surface antibodies, Poly-ADP-ribose synthetase.

Online Oral Presentation 27 (OOP27)

Personalized Medicine – A Review

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ABSTRACT:

Personalized medicine (PM) is an emerging medical practice that uses an individual's genetic profile to guide disease diagnosis, prevention, and treatment decisions. This broad and rapidly evolving healthcare field relies on interdisciplinary teams and integrated technologies to harness the molecular understanding of disease to optimize preventive healthcare strategies. Personalized medicine is being advanced by data from the Human Genome Project. Genes are pieces of DNA found in all human cells that can influence a person's response to drugs. DNA is a key component of the body's interactive chemical manipulation system, instructing the body how to behave and interact at the cellular level. Basic genes can have different shapes and chemical messengers. It is these interactions that also affect drug activity in the body. Investigation of "personal genomics" and consumer genetic testing and the implications of this field for PM. Landmark policies, laws, and government initiatives are being developed to support PMs, including the Genetic Information Non-discrimination Act passed in 2008 and proposed changes to healthcare reimbursement policies. Major technological advances and new tools to decode the human genome faster and more accurately using physically smaller but more powerful machines. Large studies and sample archives help link genetic variation to disease in multiple countries and continents. This review clearly points out the significance of disease prevention, diagnosis, and treatment decisions, which are tailored to individual patients based on information derived from genetic and genomic data, which can lead to the discovery of drugs with future trends.

Keywords:

Personalized Medicine, Genetics, Human Genome Project.

Online Oral Presentation 28 (OOP28)

Ecofriendly Simultaneous Estimation of Ponceau 4R and Carmoisine Employing Analytical Quality by Design Aided RP-HPLC Method in Commercial Food Samples Utilizing Green Ultrasound Assisted Extraction Technique

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Abstract:
Background: Ponceau 4R (E124) and Carmoisine (E122) are frequently utilized azo synthetic dye in the food industry owing to their aesthetically pleasing coloration and broad consumer acceptability. It is imperative to prioritize environmentally favorable technologies for quantifying these dyes, as excessive consumption of those poses significant health risks.
Objective: The primary objective of this research was to establish a Reversed Phase High Performance Liquid Chromatography (RP-HPLC) method that could simultaneously detect Ponceau 4R and Carmoisine, implementing green analytical chemistry (GAC) and analytical quality by design (AQbD) employing ultrasound-assisted extraction (UAE) technique in commercial food samples. **Method:** The Agilent Eclipse Plus (C_{18}, 250×4.6mm i.d, 5µm) was utilized to conduct the effective separation with the mobile phase 60:40 ratio of ethanol and acetate buffer pH 5, flow rate of 1 mL/min and detection wavelength at 515nm. Critical variables for method optimization were ethanol and flow rate, determined using central composite design (CCD). In order to adhere to the 12 principles of green chemistry, hazardous solvents were substituted with ethanol, which is distinguished by its simpleness, rapidity, and ecological sustainability. The greenness assessment was conducted utilizing green analytical procedure index (GAPI), analytical eco scale (AES) and analytical greenness metrics (AGREE). **Results:** The respective retention times for Ponceau 4R and Carmoisine were 2.276 min and 3.450 min. The recovery rate of Ponceau 4R and Carmoisine fluctuated between 70-102% and 80-102% across various marketed food samples. The procedure passed validation in accordance with the International Conference on Harmonization Q14 guidelines. **Conclusions:** The devised method demonstrates compliance with the pre-established criteria for linearity, precision, sensitivity, and reproducibility at specified working point. The GAPI, AES, and AGREE tools produced the most favorable results. **Highlights:** In future, environmentally sustainable solvent-based robust AQbD methodologies for assessing varieties of food colorants may be adopted and improved commercially.

Keywords:
Carmoisine, Ponceau 4R, RP-HPLC, Analytical Quality by Design, Ultrasound assisted extraction.

Online Oral Presentation 29 (OOP29)

Management of Coronary Artery Disease by Grafting Technology

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Abstract:
Introduction: Coronary Artery Disease (CAD) is a leading cause of morbidity and mortality worldwide. It arises from the buildup of plaque in the coronary arteries, which narrows the arterial lumen and restricts blood flow to the heart. This compromised circulation can result in chest pain (angina), myocardial infarction (heart attack), and other cardiovascular complications. Effective management of CAD is crucial for improving patient outcomes and quality of life. **Objectives:** This poster explores the role of grafting technologies, particularly coronary artery bypass grafting (CABG), in the management of CAD. It highlights advancements in graft materials and techniques aimed at enhancing treatment efficacy and patient safety. **Methods:** A review of current literature was conducted to assess the use of various graft materials in CABG, including traditional grafts like the internal mammary artery (IMA) and emerging biomaterials such as the radial artery and composite vascular grafts. Sources included recent publications on bio-printing technologies and the mechanical performance of composite grafts. **Results:** CABG remains a cornerstone in CAD management, offering significant improvements in blood flow and symptom relief. The choice of graft material is critical for long-term success. Innovations in tissue engineering and bio-printing are facilitating the development of personalized grafts with enhanced durability and biocompatibility. Radial artery grafts and advanced composite materials show promising mechanical and functional outcomes. **Conclusion:** The integration of novel grafting technologies is transforming CAD management. Personalized approaches using biomaterials such as radial artery grafts and engineered composites can improve graft longevity and functionality, representing a significant advancement in the surgical treatment of CAD.

Keywords:

CAD, Graft materials, Cardiovascular health, Heart.

Online Oral Presentation 30 (OOP30)

Network Pharmacology of Natural Polyphenols for Stroke: A Bioinformatic approach to drug design

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Abstract:
Background: Globally, stroke is a major contributor to disability and a leading cause of death. Stroke is more frequent in underdeveloped countries, where ischemic stroke is one of the most common kinds. Therefore, it is imperative to unravel the processes of ischemic stroke in more depth and develop novel therapeutics to combat the condition. Polyphenols provide a significant preventive role against multiple diseases, including cancer, cardiovascular disorders, atherosclerosis, brain dysfunction, and stroke. Methods: In the current investigation, computational tools including Swiss Target prediction, DisGeNET, Swiss ADME, pkCSM, Cytoscape, InterActiVenn, STRING database, and DAVID database were utilized to identify the signaling pathways, putative targets, along with associated genes of the polyphenols for stroke prevention. Results: This study revealed the possible interactions between the disease targets for Stroke and the selected plant-based polyphenols. Docking results also exhibited the strong to moderate affinity of the selected ligands (Apigenin, Ellagic acid, Ferulic acid, Kaempferol, Genistein, Luteolin, Naringenin, and Quercetin) towards the selected disease target. Conclusion: This study highlights the neuroprotective role of selected polyphenols through the PI3K/Akt pathway. Further studies are required to investigate additional molecular mechanisms between the polyphenols and their derivatives against pathological targets of Stroke.

Keywords:
Polyphenols, Ischemic stroke, Cardiovascular diseases, Network Pharmacology.

Online Oral Presentation 31 (OOP31)

Unlocking the Potential of Regenerative Medicine: Current Advances and Future Directions: A comprehensive review

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ABSTRACT:
One very interesting field of biomedical engineering is regenerative medicine. The terms "tissue engineering" and "regenerative medicine" are frequently used interchangeably by scientists and medical professionals. The promise of regenerative medicine is based on its ability to replace and restore damaged tissues and organs. Many treatments have been cleared or approved by the FDA and made commercially available throughout the last 20 years. New, FDA-approved medicines for conditions like rheumatoid arthritis and multiple sclerosis have been made possible by regenerative medicine. Sophisticated grafts that use scaffolding material properties and cell manipulation technologies to control cell behaviour and tissue repair have been made possible by recent research. Better disease models boost the effectiveness of treatments using regenerative medicine and hasten the clinicalization of promising strategies. To learn more about immune detection, evasion, and degradation, researchers have looked into the interaction between nanomaterials and immune cells. The response of immune cells must be taken into account in order to advance biomaterials-based regenerative medicine. The purpose of this review is to show how the current need for regenerative medicine and nanotechnology are related.

KEYWORDS:
Regenerative medicines, biomedical engineering, tissue restoration, biomaterials.

Online Oral Presentation 32 (OOP32)

Application of Artificial Intelligence In Clinical Study And Cancer Diagnosis In The Future

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INTRODUCTION: Artificial intelligence is utilized to encounter the difficulties in the healthcare systems and on major chronical abnormality like Cancer, Cardiovascular diseases etc. By using super-intelligence, optimal decision making becomes easy to process large data in short period of time. Cancer is chronic-malignant disorder with many genetic variants. For ethical and safe clinical study, AI is focused by modern biomedical research. OBJECTIVES: AI-based algorithms have a lot of potential to open the door to early detection of these genetic alterations and abnormal protein interactions. The goal of contemporary biomedical research is also to safely and morally introduce AI technology into clinical settings. AI-powered support for pathologists and physicians may represent a significant advancement in disease risk prediction, diagnosis, prognosis, and therapy. The future of medical advice points to the quicker mapping of a new treatment for each patient through clinical applications of AI and Machine Learning (ML) in cancer diagnosis and treatment. DISCUSSION: AI based study is used to predict disease risk, diagnosis and treatments. In cancer related study, AI can be used in medicine, medical imaging, precision oncology, digital oncology and drug discovery. To decode molecular signaling cascade and cancer mechanism, AI and machine learning can be used. AI can be effectively used in surgery collecting surgical consciousness. CONCLUSION: Even though surgery, chemotherapy and radiotherapy will remain standard for cancer therapy, AI and machine learning can be used to encounter current clinical strategies to deal with cancer. Therefore, AI can be used in optimal decision-making, continuous upgrade and to assist medical physicians in diagnosis and in exploring carcinogenesis in a quick time.

KEY WORDS:
Artificial intelligence, Bio-medical research, Carcinogenesis, Machine learning.

Online Oral Presentation 33 (OOP33)

A Review of Virtual Reality as a Tool for Neuroscience Exploration: A New Era of Discovery

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ABSTRACT:
Virtual reality can be utilized frequently for supporting the mental health of the population with a variety of clinical disorders. Mental health refers to variety of clinical neurological conditions that include neurological disorders, chronic pain which cause disorders psychologically, impairments of perceptions or motor activities which affect physical conditions such as disorders of eating, cognition of social and behaviour those that are presence of amputees which do not refer only the lack of psychiatric disorders. That are present in amputees that do not only refer to the absence of psychiatric disorders. It is generally established that maintaining mental health and well-being depends on having accurate perceptions of oneself and the environment, both of which can become distorted in individuals with clinical illnesses are indicated. Numerous research conducted during recent years has demonstrated the efficiency of Virtual Reality in reducing these disorders of perception of personal and environmental by creating the illusion of virtual body ownership.

KEYWORDS:

Virtual reality, artificial intelligence, Neuroscience, psychiatric disorders

Online Oral Presentation 34 (OOP34)

Proteomics - diagnosis and treatment in infertile in male and female

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Abstract:

Spermatozoa are unique cells that have highly compact DNA, motility (and hypermotility) patterns, a specific morphology, localized mitochondria and an apical acrosome. They are the end product of a dynamic process termed spermatogenesis. A total of 1139 proteins were identified in normozoospermic fertile and 1095 infertile men, respectively. The canonical pathway related to free radical scavenging was enriched with upregulated DEPs in normozoospermic infertile men. The proteins associated with reproductive system development and function, and the ubiquitination pathway were under expressed in normozoospermic infertile men. The global proteomic profile of normozoospermic infertile men is different from that of normozoospermic fertile men. Western blot analysis revealed the overexpression of annexin A2 (ANXA2), and under expression of sperm surface protein Sp17 (SPA17) and serine protease inhibitor (SERPINA5) in men with unexplained male infertility (UMI). Our data suggests that SPA17, ANXA2, and SERPINA5 may potentially serve as non- invasive protein biomarkers associated with the fertilization process of the spermatozoa in UMI. In addition, sperm exhibits several post-translational modifications, which are fundamental to their function, such as SUMOylation and ubiquitination. Discussed in this review is the current knowledge of the sperm proteome in terms of its composition and the function that these proteins determine, as well as their post-translational modifications and how these alter sperm functional integrity. Despite the explosive increase in the use of Assisted Reproductive Technologies (ART) over the last 30 years, their success rates remain suboptimal. Proteomics is a rapidly evolving technology-driven science that has already been widely applied in the exploration of human reproduction and fertility, providing useful insights into its physiology and leading to the identification of numerous proteins that may be potential biomarkers and/or treatment targets of a successful ART pregnancy. Here we present a brief overview of the techniques used in proteomic analyses and attempt a comprehensive presentation of recent data from mass spectrometry-based proteomic studies in humans, regarding all components of ARTs, including the male and female gamete, the derived zygote and embryo, the endometrium and, finally, the ART offspring both pre- and postnatally.

Online Oral Presentation 35 (OOP35)

Neural Synergy: The Integration of AI and Epilepsy Management for an Enhanced Future

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ABSTRACT:

Epilepsy affects over 50 million people worldwide, despite the presence of various technologies. Various techniques involving antiepileptic drugs, ketogenic diets, neurostimulation, surgery, cognitive behavioral therapy, biofeedback, lifestyle changes, and occasionally herbal therapies like Cannabidiol oil would be beneficial if the diagnosis and treatment were done in the early stages, preventing the time constraints. Epilepsy mainly prevails in the low-resource area, leading to urgent action on diagnosis, treatment, and to improve quality of life. It is essential to highlight the need for personalized care and treatment plans. This review explores the role of artificial intelligence (AI) in the management of epilepsy, the use of AI in easing the analysis of electroencephalogram (EEG) signals, the interpretation of data, and integrating into automated video analysis. The adaptation of AI in management hinders the difficulty in training and collecting the large amount of data set and to train various models. One of the key reasons in lacking diagnosis includes not being able to differentiate between epileptic and non-epileptic seizures and other neurological disorders, as well as accuracy in choosing appropriate anti-epileptic drugs; however, these challenges can be overcome using advancements in AI tools. The main challenge involved in AI is the privacy of neurological data, and the prime key factor is to safeguard these data. AI tools such as seizure prediction algorithms, personalized medication management, automated EEG analysis, wearable seizure detectors, AI-assisted brain imaging, adaptive neurostimulators, epilepsy management apps, and virtual clinics for remote monitoring can offer new pathways to transform epilepsy care by improving predictive analysis, real-time seizure monitoring, personalized treatment strategies, and enhancing effective and personalized management.

KEYWORDS:
Epilepsy, artificial intelligence, electroencephalogram, seizure.

Online Oral Presentation 36 (OOP36)

Development and Validation of an AQbD-Based RP-HPLC Method for the Quantification of Sitagliptin Phosphate Monohydrate in Bulk and Tablet Formulations

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ABSTRACT:

Introduction:

Analytical quality by design (AQbD) provides a structural framework for achieving a constantly validated, reliable assay and effective product life cycle management. Sitagliptin is a DPP-4 inhibitor and belongs to oral antidiabetic drugs. It is widely prescribed for diabetes mellitus (Type-II) in adult patients to enhance control of the glycemic levels. **Methods:** A risk-based HPLC methodology using the Design Expert software (Version 13), AQbD paradigm was implemented through the DoE using BBD. The optimised Analytical Target Profile (ATP) had CMA's (mobile phase composition, detection wavelength, and flow rate), thus analysing the CAA's (Rt, TF & TP) as the constraints of suitability and robustness. **Results:** The separation of sitagliptin was executed using a C18 column in isocratic elution. Methanol : 0.01M Phosphate buffer pH 3.1 at a ratio of 70:30 % was selected as the mobile phase. The flow was set at a rate of 1.2 ml/min and at 270 nm UV detection. The Rt was found to be 3.2 minutes. **Conclusion:** The method was validated, and all the validation parameters complied within the limits as per ICH guidelines. A robust AQbD-based analytical method was optimized and validated for the assay and routine analysis of sitagliptin.

Keywords:
Box-Behnken Design (BBD), Analytical Quality by Design, HPLC, Sitagliptin

Online Oral Presentation 37 (OOP37)

Quantification of Methylglyoxal in Honey Using LC-MS Method

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Introduction: Bee nectar is the source of honey, a naturally occurring sweetener utilised in the food industry. Traditional honey, which comes from the Apis bee genus, and stingless bee honey (SBH), which comes from the Melipona bee genus, are the two main types of honey produced and sold worldwide. Despite being employed as a sweetener in the food industry, its therapeutic effects on human health also make it a useful medicinal ingredient. **Methods:** Methylglyoxal (MGO) is a viscous liquid that is clear yellow in colour and has a strong smell. It was first discovered in 1913 as a crucial step in the metabolism of glucose in plants, animals, and microbes. Five distinct brands of honey were purchased, and the quantification of methylglyoxal was performed using UFLC-MS/MS method. **Result:** Identification and analysis of methylglyoxal was achieved on Intersil ODS C18 (150 mm x 4.6 mm, 5 µm) column using Acetonitrile and water with 0.1% formic acid in the ratio (80:20% v/v) as mobile phase. The flow rate was 0.800 mL/min with the run time of 4.0 mins. **Conclusion**: The methylglyoxal can be identified and quantified in different honey samples within the concentration range of 50 mg to 600 mg/kg. The quick sample preparation, high matrix tolerance, and high throughput of this method are exemplified by this application.

Keywords:

MGO, UFLC-MS/MS**,** Lepto-spermum spp, SBH.

Online Oral Presentation 38 (OOP38)

Lifecycle Management of Stability Chamber with Computerized System Used In Pharmaceutical Industry

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ABSTRACT

Introduction: For the pharmaceutical industry to ensure product quality, operational efficacy, and regulatory compliance, effective lifecycle management of computerized systems. The operation, maintenance, validation, and planning. Validation processes confirm that the system is reliable and that it complies with Good Automated Manufacturing Practices (GAMP) and legal standards. The main drawback to computerized system validation is documentation. **Methods:** Important elements in the validation technique include creating the User Requirements Specification (URS), conducting design qualification, and assessing risk. Pre-installation inspections, Installation Qualification (IQ), Operational Qualification (OQ), and Performance Qualification (PQ) follow. All criteria are appropriately confirmed and documented using a Reference Traceability Matrix. **Result:** A stability chamber simulates environmental conditions like temperature, humidity, and light to assess product stability over time, ensuring safety during manufacturing, transport, and storage. **Conclusion**: So, preparation of the Reference Traceability Matrix (RTM) can help to maintain proper documents. In this article RTM is prepared for the Stability Chamber, for proper documentation.

Keywords: Computerized system, GAMP, Lifecycle management, Documentation, Reference Traceability Matrix (RTM).

Online Oral Presentation 39 (OOP39)

Colistin or Ceftazidime-Avibactam? A Prospective Comparative Study in ICU Patients with Carbapenem-Resistant Enterobacteriaceae Infections

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Background: Carbapenem-resistant Enterobacteriaceae (CRE) infections in critically ill ICU patients are associated with high mortality and limited treatment options. Colistin and Ceftazidime-Avibactam are commonly used, yet comparative clinical outcomes remain underexplored. **Objective:** To estimate 30-day risk-adjusted mortality in ICU patients treated with Colistin versus Ceftazidime-Avibactam for CRE infections and to compare clinical outcomes and safety profiles between the two groups. **Methods:** This prospective observational study enrolled 96 ICU patients with microbiologically confirmed CRE infections. Patients received either Colistin or Ceftazidime-Avibactam based on clinical indication. The primary outcome was 30-day risk-adjusted mortality. Secondary outcomes included comparison of 30-day mortality between groups, 15-day mortality estimation, clinical success evaluation, and assessment of adverse events. **Results:** The 30-day risk-adjusted mortality was lower in the Ceftazidime-Avibactam group compared to the Colistin group. The Ceftazidime-Avibactam group also showed higher clinical success rates and fewer adverse events, particularly nephrotoxicity. The 15-day mortality data aligned with these findings, favoring Ceftazidime-Avibactam. **Conclusion:** Ceftazidime-Avibactam demonstrated a better safety and efficacy profile, with reduced mortality and higher clinical success than Colistin in treating CRE infections in critically ill ICU patients. These results support considering Ceftazidime-Avibactam as a preferred treatment, pending further large-scale studies.

Online Oral Presentation 40 (OOP40)

The Era of Artificial Intelligence Paving Way to Pharma Revolution

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Introduction: Artificial Intelligence (1950s): The timeline starts in the 1950s', marking the early days of AI. This period is characterized by an initial wave of excitement about the possibilities of creating machines that could simulate aspects of human intelligence. Machine Learning (1970s): As the timeline progresses, it highlights the 1970s' as the era when machine learning began to flourish. Machine learning is a subset of AI that focuses on the development of algorithms that can learn from and make predictions or decisions based on data. Deep Learning (2010s): The most recent development on the timeline is deep learning, which began to cause significant disruption in the 2010s'. Deep learning is a subset of machine learning that uses neural networks with many layers (hence "deep") to analyze various levels of abstraction in data.

Method: This was conducted to evaluate the role of artificial Intelli layers. Studies were selected based on relevance, originality, and scientific rigor. Data were synthesized to summarize current AI technologies, their diagnostic performance, and their implications. AI involves several method domains, such as reasoning, knowledge representation, solution search, and a fundamental paradigm of machine learning (ML). ML uses algorithms that can recognize patterns within a set of data that has been further classified. A subfield of ML is deep learning (DL), which engages artificial neural networks (ANNs). These comprise a set of interconnected sophisticated computing elements involving 'perceptons' analogous to human biological neurons, mimicking the transmission of electrical impulses in the human brain. The MLP (Multi-Layer Perceptron) network has applications including pattern recognition, optimization aids, process identification and controls; are usually trained by supervised training procedures operating in a single direction only, and can be used as universal pattern classifiers. ANNs (Artificial Neural Networks) are helpful for solving complex problems. CNNs (Convolution Neural Networks) are best for solving Computer Vision-related problems. RNNs (Recurrent Neural Networks) are proficient in Natural Language Processing. RNNs are networks with closed-loop, information, such as Boltzmann constants and Hopfield networks. CNNs are a series of dynamic systems with local connections, characterized by their topology, and have been used in image and video processing.

Results: Involvement of AI in the development of a pharmaceutical product from the bench to the bedside can be imagined given that it can aid rational drug design; assist in decision making; determine the right therapy for a patient, including personalized medicines; and manage the clinical data generated and use it for future drug development. AI can recognize hit and lead compounds and provide a quicker validation of the drug target and optimization of the drug structure design. Preclinical discovery of molecules and prediction of lead compounds before the start of clinical trials by using other aspects of AI, such as predictive ML and other reasoning techniques, help in the early prediction of lead molecules that would pass clinical trials with consideration of the selected patient population. Meta-classifier and tablet-classifier are AI tools that help to govern the quality standard of the final product, indicating a possible error in the manufacturing of the tablet. AI can also be implemented for the regulation of in-line manufacturing processes to achieve the desired standard of the product.

Conclusion: The advancement of AI, along with its remarkable tools, continuously aims to reduce challenges faced by pharma companies, impacting the **drug development** process along with the overall **lifecycle of the product**, which could explain the increase in the number of start-ups in this sector. With

the inclusion of AI in the manufacturing of pharmaceutical products, personalized medications with the **desired dose**, release parameters, and other required aspects can be manufactured according to individual patient needs. Latest AI-based technologies will not only **speed up the time** needed for the products to come to the market, but will also improve the **quality** of products and the **overall safety** of the production process, and provide better utilization of available resources along with being **cost-effective**, thereby increasing the importance of automation.

Keywords:
Artificial intelligence, machine learning, pharmacy, drug development, artificial neural netwo

Online Oral Presentation 41 (OOP41)

Isolation, Production & Characterization of Microbial Pigment From Garden Soil For Pharmacological And Pharmaceutical Applications

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Introduction: Microorganisms play a vital role in biotechnology, especially in the production of valuable compounds such as pigments, enzymes, and antibiotics. Among these, microbial pigments have gained significant attention as natural, eco-friendly alternatives to synthetic dyes, which are often harmful to human health and the environment. These pigments, produced by a wide variety of bacteria, fungi, yeast, and algae, offer benefits such as low production cost, ease of extraction, and therapeutic properties. Due to their vibrant colors and bioactive potential, microbial pigments are increasingly used in the food, pharmaceutical, textile, and cosmetic industries. **Methods:** Sample Collection: Soil samples were collected from five different locations at 10–20 cm depth, air-dried, and stored aseptically. Screening of Microorganisms: Primary Screening: Used the *Crowded Plate Technique* on Actinomycete Isolation Agar to detect pigment-producing microbes based on color zones. Secondary Screening: Pigment-producing colonies were further isolated and purified using streak plating. Isolation and Culture: Serial dilution was carried out (10^{-1} to 10^{-9}) for isolating predominant pigment-producing strains. Cultivation was done using peptone water in flasks, followed by growth in a shaker incubator for 7 days. Pigment Extraction: Extracellular pigments: Separated by centrifugation and extracted with acetone. Intracellular pigments: Cells were lysed using ultrasonication and extracted with acetone. Characterization Techniques: UV-Visible Spectroscopy: To determine maximum absorbance wavelength (λmax). FTIR Spectroscopy: To identify functional groups in the pigment. TLC: Used to analyse the separation and partial purification of pigments. Bioactivity Testing: Antioxidant Activity: Measured using DPPH free radical scavenging assay. Anti-arthritic Activity: Assessed by inhibition of protein denaturation using egg albumin. Antimicrobial Activity: Evaluated using the Kirby-Bauer disk diffusion method. Instruments Used: UV spectrometer, centrifuge, incubator, shaker, sonicator, laminar air flow, hot air oven, and FTIR setup were among the primary equipment. **Results:** Pigment-producing bacteria were successfully isolated from garden soil samples, especially FG1 and FG4. UV and FTIR analyses confirmed the presence of functional groups. The pigments showed good antioxidants, anti-arthritic, and antimicrobial activities. Two bacterial strains (*Pseudomonas putida* and *Pseudomonas aeruginosa*) were identified and deposited in GenBank. **Conclusion:** This study successfully isolated and characterized pigment-producing bacteria from garden soil. The identified pigments exhibited promising antioxidant, anti-inflammatory, and antimicrobial properties. Given their non-toxic and biodegradable nature, these microbial pigments have significant potential in pharmaceutical, food, textile, and cosmetic industries as natural alternatives to synthetic colorants. Further scale-up and application-specific testing could unlock commercial applications for these eco-friendly bio pigments.

Keywords:
Microbial pigments, Soil bacteria, Natural colorants, *Pseudomonas*, Antioxidant activity.

Online Oral Presentation 42 (OOP42)

Cardiometabolic Index and Insulin Sensitivity: Benefits of Synbiotics with Vildagliptin and Metformin Combination in Elderly With Type 2 Diabetes Mellitus: An Open-Label Randomized Controlled Trial

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Introduction: Type 2 diabetes mellitus (T2DM) becoming a greater global concern, particularly among the elderly. With over 77 million cases in 2019, India is expected to have more than 100 million cases by 2030, making it the country with the second-highest prevalence of diabetes. In older T2DM patients, gut dysbiosis, inflammation, and changes in body composition exacerbate insulin resistance. Synbiotics may improve glycemic control by altering gut microbiota, while vildagliptin–metformin fixed-dose therapy is safe and effective. This study examines how synbiotics affect the metabolic markers TyG and Cardiometabolic Index (CMI) in order to determine their insulin sensitivity and cardiometabolic health. **Methods:** It was an open-label, randomized controlled study, carried out at a tertiary care teaching hospital in Chennai over a 24-month period. After IEC approval, written informed consent, participants were included based on inclusion and exclusion criterias. Two groups (n=105 each) of 210 elderly T2DM patients were assigned. Vildagliptin 50 mg and metformin 500 mg were administered once daily after breakfast to Group 1 and the same combination, plus synbiotics, to Group 2. waist-to-hip ratio, Triglyceride to HDL-C ratio and Triglyceride–Glucose Index were analyzed. **Results:** Both groups showed significant reductions in TyG Index and TG/HDL-C ratio, indicating improved insulin sensitivity and reduced cardiometabolic risk. GP2, receiving synbiotics, had greater improvements. Waist-Hip Ratio showed a slight, non-significant decrease, suggesting limited impact on body fat distribution within the study period. **Conclusion:** Synbiotics supplementation in elderly with T2DM along with antidiabetic medications, enhancing the metabolic outcomes and improve the quality of life.

Key words: Synbiotics, TyG Index, TG/HDL-C ratio, Cardiometabolic Index, Type 2 diabetes mellitus

Online Oral Presentation 43 (OOP43)

Enhancing carvedilol solubility through solid dispersion via kneading method: A formulation approach

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Objective: This study aims to employ a solid dispersion approach to enhance the solubility and dissolution of carvedilol. **Methods:** The low oral bioavailability of carvedilol is attributed to its poor solubility, which is categorized under the biopharmaceutical classification system (BCS) - II. Different ratios of the drug and beta-cyclodextrin were formulated. The produced solid dispersion was thoroughly examined for drug and excipient compatibility using Differential Scanning Calorimetry (DSC) and Fourier Transform Infra-Red Spectroscopy (FTIR) methods. In addition, studies using scanning electron microscopy (SEM) and X-Ray Diffraction (XRD) were conducted to investigate the transition from crystalline to amorphous nature. Kinetic calculations were carried out, along with *in vitro* dissolving studies and batch optimization based on solubility aspects. **Results:** FTIR studies revealed that there was no incompatibility between the drug and the carrier. DSC studies also confirmed the fact that there is no interaction between the drug and the carrier by the disappearance of an endothermic peak. XRD studies revealed that there was a significant reduction in the intensity of peaks, indicating the conversion of crystalline to the amorphous form of drug solid dispersion of carvedilol. **Conclusion:** The present investigation concluded that the combination of drug and carrier enhanced the solubility of the aqueous soluble drug carvedilol. However, *in vivo* studies are essential to establish its potential effect.

Keywords:

Beta-cyclodextrin, Carvedilol, Solid dispersion, Solubility enhancement, Scanning Electron Microscopy

Online Oral Presentation 44 (OOP44)

Exploring The Neuroprotective Effects of Pterostilbene Against Rotenone-Induced Parkinson Disease in Zebra Fish: An Integrated In Silico And In Vivo Approach

Sudharsan A

Purpose: This study aimed to investigate the neuroprotective effects of pterostilbene, a natural stilbenoid found in blueberries, against rotenone-induced Parkinson's disease (PD) in zebrafish. As a resveratrol analog, pterostilbene exhibits antioxidant, anti-inflammatory, and neuroprotective properties, making it a promising candidate for PD intervention.
Methods: A combination of in vivo zebrafish experiments, biochemical assays and in silico molecular docking and dynamics simulations was employed. Adult
male zebrafish were exposed to 5 µg/L rotenone for 21 days to induce PD-like neurodegeneration, with co-administration of pterostilbene at 125 µg/L and 250 µg/L. Molecular docking assessed pterostilbene's binding affinity to monoamine oxidase (MAO), while molecular dynamics simulations evaluated complex stability. Behavioral tests and biochemical analyses were conducted on day 22 to assess neuroprotective efficacy.
Results: Pterostilbene treatment significantly improved locomotor activity (*p* < 0.0001) and reduced anxiety-like behaviors in rotenone-exposed zebrafish, with the 250 µg/L dose demonstrating the most robust effects. Furthermore, pterostilbene attenuated dopaminergic neuron degeneration and neuroinflammation in a concentration-dependent manner (*p* < 0.001), as supported by behavioral and biochemical data. Molecular docking and dynamics simulations confirmed pterostilbene's strong interaction with MAO, suggesting a potential mechanism for its neuroprotective action.
Conclusion: Pterostilbene exhibits significant neuroprotective effects against rotenone-induced PD in zebrafish, likely mediated through its antioxidant and anti-inflammatory properties. These findings highlight its potential as a therapeutic agent for PD, though further pharmacokinetic and dosing studies are required before clinical translation. This study underscores the importance of exploring natural compounds for neurodegenerative disease treatment.

Online Oral Presentation 45 (OOP45)

In Silico Exploration of Sugiol as a Potential Therapeutic Agent Against Parkinson's Disease: A Network Pharmacology and Docking Approach

Santosh M

Abstract:
Parkinson's disease (PD) is a progressive neurodegenerative disorder characterized by dopaminergic neuron loss, α-synuclein aggregation, and neuroinflammation. Current therapies offer only symptomatic relief, Underscoring the need for novel therapeutic strategy. **Sugiol**, a bioactive diterpenoid, exhibits anti-inflammatory, antioxidant, and neuroprotective properties, but its potential mechanisms in PD remain unexplored. This study employs **network pharmacology and molecular docking** to systematically investigate sugiol's therapeutic effects against PD. Potential targets of sugiol were systematically predicted using **SwissTargetPrediction**, followed by protein-protein interaction (PPI) network construction (**STRING**) and hub gene analysis (**Cytoscape**). **KEGG pathway enrichment** highlighted sugiol's significant association with the **NF-κB signalling pathway**, here **COX-2**—a key downstream mediator of NF-κB—emerged as a high-priority target. **Molecular docking studies (Molegro Virtual Docker 6.0)** demonstrated robust binding of sugiol to **COX-2** (Moldock Score: −109.831), approaching the affinity of the reference inhibitor **celecoxib** (−144.456). These results suggest that sugiol, like celecoxib, may effectively modulate **COX-2/NF-κB-driven neuroinflammation**, positioning it as a promising key mechanism against Parkinson's disease pathogenesis. These findings underscore sugiol's potential as a COX-2 – target therapeutic agent for mitigating neuroinflammation in Parkinson's disease pathogenesis, positioning it as a promising candidate for further *in vitro* and *in vivo* validation. This study provides a foundational framework for repurposing natural compounds in PD therapeutics through computational approaches.

Online Oral Presentation 46 (OOP46)

Evaluation of The Protective Effect of Novel Glitazones as Anti-Parkinson's Agents By *In-Vitro* And *In-Vivo* Studies

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Abstract
Parkinson's disease (PD), a progressive neurodegenerative disorder, arises from the degeneration of dopaminergic neurons and oxidative stress. Existing treatments provide symptomatic relief but fail to address underlying neurodegeneration. This study evaluates the neuroprotective potential of novel glitazones, focusing on compound 9j, through in vitro and in vivo analyses using a 6-hydroxydopamine (6-OHDA)-induced rat model of PD. Twenty-three glitazone derivatives were screened using molecular docking to identify candidates with strong PPAR-γ binding affinity. Compounds 9j and 13d were prioritized for further evaluation based on pharmacokinetic profiles. Acute toxicity studies (OECD 423 guidelines) established the safety of compound 9j, which was subsequently tested at three doses in the PD rat model. Behavioral assessments revealed dose-dependent improvements in motor deficits, including locomotion and grip strength. Biochemical analyses demonstrated enhanced antioxidant defence mechanisms with significant increases in endogenous markers such as superoxide dismutase (SOD), catalase (CAT), and reduced glutathione (GSH), alongside reduced lipid peroxidation. Additionally, compound 9j did not induce hepatotoxicity, as evidenced by stable SGOT and SGPT enzyme levels. The results suggest that compound 9j mitigates PD-associated neurodegeneration through its antioxidant and anti-inflammatory properties. Its efficacy parallels that of standard treatments, highlighting its potential as a novel therapeutic agent. This study underscores the importance of targeting PPAR-γ pathways in developing neuroprotective strategies for PD.

Keywords: Parkinson's disease, PPAR-γ, Novel glitazones, 6-OHDA, Antioxidants, Neuroprotection

Online Oral Presentation 47 (OOP47)

A Cross-sectional study on the Prevalence of Non-compliance of pharmacological therapy in geriatric patients with chronic diseases on polypharmacy

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Aim and Objectives
Chronic diseases can cause significant reduction in quality of life of geriatric patients. Chronic illness often results in polypharmacy in geriatric patients. Non-compliance to prescribed pharmacological treatment is often a threat in achieving the desired therapeutic outcome in geriatric patients. The objective of this study is to study the prevalence of non-compliance and factors determining non-adherence in geriatric patients with chronic diseases on polypharmacy. **Methods:** This prospective study was conducted in a tertiary care hospital in Tamil nadu among inpatients and outpatients in general medicine department during September 2021- March 2022. All geriatric patient with chronic diseases on polypharmacy were included in the study. Written informed consent was obtained from the participants and the study was approved by the institutional ethics committee. **Results:** A total of 268 geriatric patients participated in the study of which 47 % were males and 53% were females. Seventy six participants were taking three tablets per day and forty participants were taking 4 tablets regularly. 32 participants were taking more than 4 tablets. It was observed that the prevalence of non-compliance of medication amng geriatric population was 16 % in our study. The most common causes of non compliance were feeling of improvement of the condition, forgetfulness. **Conclusion:** There is a growing demand for interventions aimed at preventing health issues related to Adverse Drug Reactions (ADRs). Enhancing our understanding of preventable ADRs is crucial for developing strategies that safeguard patients from the potential impact of such reactions.

Keywords
Pharmacovigilance, ADR reporting, Antimicrobials

Online Oral Presentation 48 (OOP48):

Decoding the Anti-Arthritic & Multi-Target Mechanisms of *Vitex negundo* Phytoconstituents for Rheumatoid Arthritis: A Network Pharmacology Approach

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Vitex negundo, frequently referred to as the Chaste Tree, plays a significant role in the treatment of rheumatoid arthritis (RA). It reduces inflammation, alleviates pain, protects joints from damage, and regulates immune responses. Its combination of anti-inflammatory, antioxidant, and immune-modulating properties makes it an excellent choice for RA treatment. Furthermore, its phytochemicals can target crucial molecular processes involved in the development of RA. This highlights its potential as a natural supplement to conventional RA therapy. This study utilized network pharmacology, molecular docking, and molecular dynamics simulations to investigate potential pathways that could help defend against rheumatoid arthritis. The Swiss target database revealed associated pharmacological targets, while Gene Ontology and OMIM provided the target genes related to RA. These candidate drug targets were examined in STRING to identify any potentially significant drug targets involved in RA. Additionally, their statistical centrality metrics and biological annotations were analyzed in Cytoscape. Their significance level ranged from > 0. 0.4. The optimal K- core network, established by MCODE, also represented these therapeutic targets. The results showed a top ten hub gene interaction, including the proteins IL 2, MMP 9, EGFR, SRC, ALB, CASP 3, ERBB 2, PTGS 2, ESR 1, and HSP 90 AA 1. ADMET and molecular dynamics indicated the stability of the proteins at the cytoskeleton level. Network analysis revealed that the top ten genes play a crucial role in the treatment and management of RA. By targeting these genes with Benzaldehyde, 5- Hydroxyisophthalic acid, and Negundoside, we can modulate critical signaling networks, which could be one of the molecular mechanisms underlying the effectiveness of the phytoconstituents against RA. Molecular docking studies demonstrated that the strong binding abilities of phytoconstituents with the key target proteins could help manage or treat RA.

Keywords:

Rheumatoid arthritis, *Vitex negundo*, Network Pharmacology, Molecular Dynamics.

Online Oral Presentation 49 (OOP49):

Formulation, Optimization, and Evaluation of a *Musa paradisiaca* Leaf Extract-Based Transdermal Patch for Anti-Inflammatory

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Abstract

Transdermal drug delivery systems (TDDS) provide an effective means of drug administration by enhancing bioavailability and ensuring sustained release while bypassing first-pass metabolism. This study focuses on the formulation and evaluation of a transdermal patch incorporating *Musa paradisiaca* leaf extract, which is rich in bioactive phytochemicals with potential therapeutic benefits. Five formulations (F1–F5) were developed using a chitosan-ethyl cellulose polymeric matrix with glycerol as a plasticizer. The formulations were initially assessed for physicochemical properties, including tensile strength, moisture content, pH, and uniformity. *In-vitro* drug release studies were conducted to evaluate the release profile, and **F5 was identified as the optimized formulation based on its superior physicochemical properties and sustained release profile**. The release kinetics of F5 were analyzed to determine the mechanism of drug diffusion. Additionally, F5 underwent *in-vitro* biological evaluations, including antioxidant and anti-inflammatory assays. Further cytotoxicity assessment was performed using the MTT assay on RAW 264.7 macrophage cell lines to determine the biocompatibility and potential anti-inflammatory effects of the patch. A three-month stability study of F5 was conducted **following ICH Q1A(R2) guidelines** to evaluate its integrity in terms of drug content, mechanical properties, and release characteristics over time. The results suggest that the *Musa paradisiaca* extract-based transdermal patch (F5) exhibits promising physicochemical stability, sustained drug release, and potential therapeutic efficacy. Further *in-vivo* studies are required to validate these findings and assess their clinical applicability in anti-inflammatory treatment.

Keywords: *Musa paradisiaca*, transdermal patch, Drug release kinetics, RAW 264.7 macrophage cell lines.

CONFERENCE ABSTRACTS:

POSTER PRESENTATION

Poster Presentation 1 (PP1):

Advancing Surgical Anaesthesia Through Hypnotherapy: From Malaysia to The Global Landscape

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ABSTRACT:
Introduction. Hypnotherapy, derived from the Greek word *Hypnos* meaning 'sleep', has re-emerged as a promising adjunct in surgical anaesthesia. Its historical roots trace back to 1829 when French Surgeon Jules Cloquet successfully performed a mastectomy using hypnosis as the primary anaesthetic. This systematic review evaluates its contemporary efficacy in reducing peri-operative anxiety, managing post-operative pain, and enhancing recovery, while addressing the specific challenges of implementation in Malaysia compared to global adoption trends. **Methods.** A comprehensive literature review was conducted in accordance with the PRISMA guidelines, analysing 70 peer-reviewed studies from 1992 to 2024 across multiple databases including PubMed, Cochrane, and Scopus. 15 studies met the inclusion criteria, comprising randomized controlled trials, case-control studies, and clinical surveys. The review focused on clinical outcomes and implementation barriers. **Results.** The analysis revealed that hypnotherapy significantly reduces peri-operative anxiety and decreases analgesic use by 30-50%, while shortening hospital stay by an average of 1.5 days. Despite these benefits, adoption remains limited due to cultural scepticisms, lack of standardized protocols, and insufficient clinician training. Notably, only two of the reviewed studies were conducted in Malaysia, highlighting a significant research gap in this region. Emerging technologies such as virtual reality (VR)-assisted hypnosis show promise for overcoming some of these barriers. **Conclusion.** Hypnotherapy presents a valuable, evidence-based adjunct to surgical anaesthesia with demonstrated clinical benefits. However, broader implementation requires targeted strategies, including clinician education, cultural adaptation of protocols, and policy support. Future research should prioritize multicentre trials in underrepresented regions like Malaysia to strengthen the evidence base as well as facilitate global adoption.

Keywords:
Hypnotherapy, Surgical anaesthesia, Peri-operative anxiety, post-operative pain, Malaysia

Poster Presentation 2 (PP2):

Awareness of Hypnotherapy Practice in Malaysia Among Clinical Medical Students

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ABSTRACT:
Introduction: Hypnotherapy, a psychological intervention that leverages the therapeutic potential of hypnosis, has demonstrated efficacy in addressing a range of mental health conditions, including anxiety, depression, and stress. Despite its documented efficacy, its integration into mainstream medical practice remains limited due to gaps in awareness and misconceptions, particularly among future healthcare providers. This cross-sectional study examines the awareness, attitudes, and perceived barriers related to hypnotherapy among clinical medical students in Malaysia. **Methodology:** A structured questionnaire was developed to assess knowledge, perceptions, and experiences among students from four Malaysian universities. **Results:** Preliminary findings indicate limited awareness but a significant interest in learning more about hypnotherapy. The outcome of this study highlights the need for incorporating evidence-based complementary therapies, like hypnotherapy, into medical curricula to enhance holistic patient care. **Conclusion:** These insights are anticipated to guide educational reforms and foster a greater understanding of hypnotherapy's role in clinical practice.

Keywords:
Hypnotherapy, Medical Education, Awareness, Clinical Medical Students

Poster Presentation 3 (PP3)

Evaluating an Elective Program for Clinical Medical Students: Insights from Student Feedback

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ABSTRACT:
Introduction: This study evaluates a renal dialysis elective programme created for clinical medical students. Students' feedback on lecture content, clinical exposure, and suggestions for improvement were analysed. The aim was to assess the effectiveness of the programme in enhancing clinical expertise, technical knowledge, and career development in nephrology. **Methods:** A mixed-method study was conducted involving five fourth-year MBBS students. Feedback was collected through open-ended questionnaires to identify strengths, limitations, and recommendations for enhancing the learning experience. **Results:**
Students reported that the programme was well-structured and informative, especially the lectures on intradialytic complications. They valued opportunities for interdisciplinary learning, communication with patients, and observing dialysis procedures. However, concerns were raised regarding limited hands-on experience, outdated visual aids, and lack of medical indemnity for practical skills**.** Recommendations included integrating simulation-based learning, updating teaching materials, aligning theoretical content with clinical practice, and introducing such electives earlier in the curriculum. Students also highlighted the benefit of learning local languages to improve patient engagement. **Conclusion:**
The renal dialysis elective provided meaningful exposure to clinical, technical, and administrative aspects of nephrology. Addressing the identified gaps could significantly enhance its effectiveness, better equipping medical students for specialised roles in chronic care and nephrology.

Keywords:
Elective programme, Clinical medical education, Student feedback, Nephrology, Chronic care

Poster Presentation 4 (PP4):

Coping Mechanisms and Resilience Among Clinical Medical Students During COVID-19 Pandemic: A Systematic Review

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Abstract:
The COVID-19 epidemic caused substantial disturbance in medical education, in particular, for clinical medical students who rely on hands-on teaching and patient encounters. This systematic review examines the coping mechanisms and resilience strategies employed by clinical medical students throughout the pandemic. A literature search in MEDLINE (PubMed) for studies published between March 2020 and March 2024, using PRISMA guidelines, identified 99 results, 12 of which matched the inclusion criteria. Findings reveal that students faced academic and psychological challenges, including limited clinical exposure, increased stress, and disruptions to career progression. To adapt, students utilized coping strategies such as virtual peer support, telehealth training, mindfulness practices, and self-directed learning. Institutional support, including mental health resources and hybrid learning models, played a crucial role in fostering resilience. This review highlights the importance of integrating resilience-building strategies into medical curricula to prepare students for future crises. Key recommendations include strengthening technological infrastructure, formalizing mental health support, and developing hybrid learning models that balance online education with hands-on training.

Keywords:
Clinical Medical students, Resilience, COVID19

Poster Presentation 5 (PP5):

A Study on Dietary Habit, Physical Activity of Adolescent Girls in Dhaka City with Their Nutritional Status

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Abstract:
Introduction: Adolescence is the phase of life where people experience their highest growth, also known as teenage years, and half of them are girls. This study examines the current nutritional status, dietary habits, and physical activity levels of adolescent girls in Dhaka City. **Methods:** It is a cross-sectional study conducted from March 2022 to February 2023 on 1000 randomly selected adolescent girls. Their height and weight were measured with a measuring tape and a digital scale. Other data was collected through a previously set questionnaire. The analysis was done by the SPSS software. **Results:** The study revealed that 31.7% of the respondents are underweight, and 10.8% are overweight. Low physical activity level is seen among the participants, only 27.5% of girls are active. 37.5% and 27.5% of girls respectively don't take eggs-milk and fruits-vegetables regularly. Gum-bleeding, bone-pain, dizziness-short breath, and vision problems are noticed. Bone-pain is associated with vitamin D deficiency (p value<0.001). **Conclusion:** Teens are recommended to be physically active and have a balanced diet to avoid low immunity and infectious diseases.

Key Words:
Nutritional Status, Adolescent Girls, Physical Activity, Dietary Habit.

Poster Presentation 6 (PP6):

Successful Tandem Haematopoietic Cell Transplantation in a Young Adult with Primary Progressive, Chemo-Refractory Hodgkin Lymphoma

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Abstract:
Introduction: This case report highlights the therapeutic value of tandem haematopoietic cell transplantation (HCT) in the management of primary progressive, chemo-refractory Hodgkin lymphoma (HL), and underscores the importance of appropriate patient selection to optimise treatment outcomes while minimising toxicity. **Case Report**: In October 2018, a 23-year-old man presented with multiple swellings in the neck and B symptoms for one month. His cervical lymph node biopsy confirmed classical HL, nodular sclerosis subtype (NSHL). First-line ABVD chemotherapy failed to control the disease as end-of-therapy positron emission tomography/ computed tomography scan (PET/CT) revealed progressive disease. Second-line ICE chemotherapy was initiated with concurrent autologous stem cell collection, but disease progression continued. Despite receiving multiple lines of salvage therapy, his disease remained persistent and progressive. Repeat biopsy confirmed NSHL with positive PD-L1 expression. Given his chemo-refractory status, Brentuximab vedotin and Nivolumab were given as bridging therapy. In February 2021, he underwent autologous HCT (BEAM), achieving significant metabolic improvement on PET/CT. He subsequently underwent allogeneic HCT (reduced-intensity conditioning FluBu3) in May 2021, resulting in complete metabolic response. He overcame transplant-related consequences (febrile neutropenia, transaminitis, mucositis). Maintenance Brentuximab was administered from November 2021 to June 2022. At the 4-year follow-up post-transplant, his disease status remains in complete response, and he is well with good health-related quality of life. **Conclusion**: Tandem HCT (sequential autologous followed by allogeneic HCT) has shown therapeutic efficacy and represents a viable treatment strategy for patients with Hodgkin lymphoma who fail to achieve complete response following initial chemotherapy. This approach offers improved progression-free survival compared to autologous HCT alone. However, its use remains highly selective due to the considerable risk of treatment-related toxicities, including transplant-related mortality.

Keywords:
Chemo-refractory, clinical outcome, complete response, Hodgkin lymphoma, tandem haematopoietic cell transplantation

Poster Presentation 7 (PP7)

The Efficacy of Hypnosis in Weight Management: A Systematic Review

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Abstract:
Introduction: Obesity is a global health issue linked to chronic diseases including cardiovascular disorders, diabetes, and mental health challenges. Although numerous weight loss interventions exist, long-term success remains difficult. Hypnosis has emerged as a promising complementary approach to address behavioural, psychological, and physiological components of obesity. **Methods**: This systematic review followed PRISMA guidelines. A structured search was conducted using Google Scholar and PubMed for studies published between 2020 and 2024. Eligible studies were in English and assessed hypnosis or self-hypnosis as the main intervention for weight management. Seven studies were selected, including randomised controlled trials, cross-sectional studies, and a pilot study. **Results**: Most studies demonstrated significant improvements in weight-related outcomes, including reductions in BMI and waist circumference. Several studies also reported enhanced hormonal profiles (e.g., leptin, adiponectin), improved impulse control, and reduced emotional eating. Malaysian studies confirmed the feasibility and local acceptance of hypnotherapy but highlighted barriers such as cultural scepticism, lack of trained practitioners, and absence of standardised protocols. **Conclusion**: Hypnosis offers a promising, low-risk adjunct to conventional weight loss strategies. While international evidence supports its efficacy, broader integration in Malaysia requires clinician education, public awareness, and the development of clinical guidelines. Further large-scale trials are necessary to establish long-term outcomes and inform healthcare policy.

Keywords:
hypnosis, weight loss, obesity, self-hypnosis, behavioural therapy

Poster Presentation 8 (PP8)

Man Vs. Machine, Or Best Together? Evaluating Layperson, Physician and Physician-AI Teams in Clinical Diagnosis Across Complexity Levels

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Abstract:

Introduction: Large language models (LLMs) like ChatGPT are emerging in clinical decision-making, but the diagnostic performance of laypersons using ChatGPT, unaided physicians, and AI-assisted physicians remains poorly compared—especially across real-world case complexity. **Objective:** To assess diagnostic accuracy, triage safety, and decision-making quality across three groups: (1) laypersons using ChatGPT, (2) physicians alone, and (3) physicians using ChatGPT as a support tool. A secondary aim: to examine how performance shifts with case complexity—determining if AI is a crutch, a catalyst, or clever fluff, depending on the user. **Methods:** Fifteen clinical vignettes, stratified into three complexity levels—(1) Step 2 CK/PLAB, (2) MRCP, (3) FRCP—were answered by all groups. Laypersons used only ChatGPT-4o; control physicians worked unaided; AI-assisted physicians could integrate ChatGPT-4o's input. Outcomes: (1) diagnostic accuracy (primary), and (2) triage safety, appropriateness of investigations, and alignment with expert consensus (secondary). Expert clinicians and clinical guideline standards (e.g., NICE, UpToDate) served as benchmarks. **Results:** Findings are pending formal presentation at MI-MED 2025. **Conclusion:** This study offers a novel, complexity-stratified framework for evaluating human-AI diagnostic collaboration. It probes whether AI amplifies or hinders clinical reasoning depending on expertise and case difficulty. Implications span medical education, diagnostic safety, and clinical AI deployment.

Keywords:
Diagnostic Reasoning, Clinical Decision Support, Physician-AI Dyad, Diagnostic Complexity, Evidence-Based Medicine

Poster Presentation 9 (PP9)

Artificial Intelligence in Radiology: Shaping The Future of Diagnostic Imaging

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Abstract:
Artificial Intelligence (AI) is transforming diagnostic radiology by augmenting image interpretation, automating mundane tasks, and enabling clinical decision-making. Using machine learning (ML) and deep learning (DL) algorithms, AI can now detect, classify, and quantify abnormalities across different imaging techniques such as X-rays, CT, MRI, and Ultrasound with more precision over time. These technologies assist radiologists in more accurate detection of the subtle patterns in imaging that can be missed by the human eye, hence reducing errors in diagnosis. Here, we summarize the key developments in the use of AI in diagnostic radiology from lesion identification, organ segmentation, disease classification, and even in optimizing the workflows. The practice of radiology is highlighted on how the tools of AI may be integrated, emphasizing the role of the radiologist as a human resource that ought to be preserved, enhanced, not eliminated. The author presents the most important problems today: the bias of algorithms, limited generalizability, inadequate privacy safeguards, and regulatory constraints. Also, the authors attempt to analyze the ramifications of AI in radiology with special consideration to validation studies, collaboration of experts from different fields, deployment ethics, and the safe application to guarantee effective use. In the end, AI is likely to improve the operational radiology profoundly, so that the radiologists' workforce is more efficiently utilized and the diagnostic precision is significantly higher.

Keywords:
Artificial Intelligence, Medical Imaging, Machine Learning, Clinical Decision Support, Computer-Aided Diagnosis.

Poster Presentation 10 (PP10)

Ileal Perforation in Intestinal Tuberculosis: Diagnostic and Management Insights from a Tertiary Hospital in India

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Abstract

Ileal perforation secondary to tuberculosis is a serious and often under-recognized complication of extrapulmonary tuberculosis. This study examines the clinical presentation, diagnostic challenges, management strategies, and outcomes associated with tuberculous ileal perforation. A retrospective observational analysis was conducted on 14 patients who were diagnosed and surgically managed for this condition at a tertiary care center in India. The majority of patients presented with abdominal pain, fever, and signs of peritonitis, often leading to delays in diagnosis. Radiological imaging and microbiological investigations were instrumental in establishing the diagnosis. All patients underwent surgical intervention followed by a standardized antitubercular therapy regimen. The findings underscore the critical importance of early recognition and timely surgical and medical management to optimize patient outcomes. Further studies are warranted to better characterize this complication and refine treatment protocols, especially in high-burden tuberculosis regions.

Keywords:

Ileal perforation, tuberculosis, extrapulmonary, surgical intervention, antitubercular therapy

Poster Presentation 11 (PP11)

Role of Artificial Intelligence in Detecting Colorectal Cancer Recurrence After Surgery

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ABSTRACT: -
Colorectal cancer (CRC) recurrence after surgery is a major concern for patient prognosis and survival, making accurate and timely detection necessary. While imaging, biomarker analysis, and colonoscopies are important post-operative surveillance techniques, their sensitivity and specificity are often constrained. In recent years, artificial intelligence (AI) has emerged as a powerful tool for improving the identification and prognosis of colorectal cancer recurrence. Artificial intelligence (AI) algorithms, particularly ones built on machine learning (ML) and deep learning (DL), have shown great promise in the analysis of complicated medical data, including genetic profiles, histological slides, medical imaging, and patient clinical histories. By identifying subtle patterns that may be prone to be overlooked by clinicians, these systems have the potential to increase diagnostic accuracy and detect recurrences early. This study reviews recent developments, applications, and difficulties in the use of AI in the post-operative surveillance of colorectal cancer. It highlights AI-powered methods across genetics, pathology, and radiology, emphasising their potential incorporation into clinical practice for predictive and individualized recurrence monitoring. Additionally, the paper addresses the prospects of AI technology in the battle against colorectal cancer recurrence, as well as its ethical and regulatory considerations essential for their effective implementation into clinical practice.

KEYWORDS:
Cancer recurrence, Artificial intelligence, Post-operative surveillance, Predictive modeling, Medical imaging.

Poster Presentation 12 (PP12)

Perceptions of Excessive Car Window Tinting Among Drivers in Kuala Lumpur: A Pilot Study

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Abstract:

Introduction: Excessive car window tinting has become increasingly popular in urban areas, particularly in Malaysia, due to its perceived benefits such as thermal comfort, glare reduction, and privacy (Hafzi Md Isa et al., 2015; Tarasenko O. V. et al., 2022). However, concerns regarding road safety, visibility impairment, and regulatory compliance persist (Hafzi Md Isa et al., 2015). Research indicates that heavily tinted windows may reduce a driver's ability to detect road hazards, particularly in low-light conditions, posing significant risks to road safety (Kuchár et al., 2023; Noy, 2001). While Malaysia has implemented Visible Light Transmission (VLT) regulations to ensure an appropriate balance between comfort and safety, compliance remains inconsistent (Mohd et al., 2017). **Objective**: This study aims to examine drivers' perceptions of excessive car window tinting in Kuala Lumpur by assessing awareness, perceived risks, compliance behavior, attitudes toward enforcement, and personal responsibility regarding car window tinting regulations. **Methodology**: A cross-sectional survey involving 52 participants recruited via convenience sampling utilized a structured, six-section questionnaire: Demographics, Awareness and Knowledge, Perceived Risks and Safety, Compliance and Behavior, Attitudes Toward Enforcement, and Personal Responsibility. Validity and reliability were confirmed, with a Cronbach's alpha of 0.842. Data analysis was performed using SPSS version 29.0.2.0, incorporating descriptive frequency analysis, One-Way ANOVA, and linear regression. **Results**: The results show a knowledge gap in Malaysia's tinting regulations among the participants, as many respondents displayed neutral or low awareness levels. Excessive tinting was widely perceived as a road safety concern, particularly due to visibility issues in low-light conditions. Perceptions of compliance varied, with uncertainty and perceived noncompliance noted. Most respondents supported stricter enforcement measures and recognized their personal responsibility in adhering to vehicle modification laws, indicating a willingness to comply when adequately informed. **Conclusion**: Perception of window tinting regulations is moderate among drivers, but compliance is inconsistent due to enforcement gaps, personal preferences, and misconceptions about visibility risks. Targeted public education, stronger enforcement, greater regulatory transparency, and technological advancements are recommended to improve adherence and road safety. Future research should explore region-specific differences in compliance and assess the impact of public awareness campaigns on regulatory adherence.

Keywords:

Excessive Window Tinting, Driver Perceptions, Car Window Tinting VLT Compliance, Road Safety, Vehicle Tint Regulations, Driver Awareness.

Poster Presentation 13 (PP13)

Diagnostic and Therapeutic Approaches to Appendicular Neoplasms: A Review

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Abstract:
Appendicular neoplasms, though rare, comprise a diverse spectrum of tumors including adenocarcinomas, carcinoid tumors, and mucinous neoplasms. This review synthesizes current evidence on the epidemiology, diagnostic modalities, and therapeutic strategies associated with these tumors. A comprehensive literature search was conducted using databases such as PubMed and Scopus to identify studies reporting on incidence, clinical presentation, diagnostic challenges, and treatment outcomes. Epidemiological data reveal a slight male predominance, with incidence varying geographically. Clinically, these neoplasms often mimic acute appendicitis, which can lead to delayed or missed diagnoses. Imaging modalities like ultrasound and computed tomography are instrumental in detection, though definitive diagnosis frequently relies on histopathological analysis. Management typically involves surgical resection, and adjuvant chemotherapy may be warranted in high-grade or advanced cases. Prognosis is highly dependent on histological subtype and disease stage at diagnosis. This review also highlights gaps in current literature, particularly regarding long-term outcomes and standardized treatment protocols, and proposes areas for future investigation to improve clinical management.

Keywords:
appendicular neoplasms, adenocarcinomas, carcinoid tumor, mucinous neoplasm, clinical presentation

Poster Presentation 14 (PP14)

Failure Rate and Determinants of Autologous Peripheral Blood Stem Cell Mobilization in Lymphoma

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Abstract:
Introduction: High-dose chemotherapy followed by autologous stem cell transplantation (ASCT) remains the standard of care for management of relapsed lymphoma. Successful mobilisation of autologous peripheral blood stem cells (PBSC) is critical to the success of ASCT and engraftment. Objectives of this analysis is to determine the failure rate and its associated factors of autologous PBSC mobilisation in lymphoma patients. **Methods:** This retrospective study included 710 lymphoma patients who underwent PBSC mobilisation at two transplantation centres in Malaysia, from January 2011 to December 2020. Mobilisation strategies included chemo-mobilisation (n=263), granulocyte colony stimulating factor (G-CSF) alone (n=399) and plerixafor-based regimens (n=8). After excluding patients who received plerixafor (n=8) and those with missing data (n=40), 662 patients were evaluated for factors associated with mobilisation failure. **Results:** Failure rate of autologous PBSC mobilisation in lymphoma patients was 12.4% (88/710). In multivariate analysis of 662 patients, factors significantly associated with failure of PBSC mobilisation included body weight >60 kg (p=0.026), G-CSF use >5 days (p=0.025), Eastern cooperative oncology group performance status (ECOG) ≥2 (p=0.014) and peripheral blood (PB) pre-harvest CD34+ count <20 cells/μL (p<0.001). In the chemotherapy-mobilised subgroup (n=263), mobilisation failure was independently associated with ECOG ≥2 (p=0.020), PB pre-harvest monocyte count $<1.8\times10^9$/L (p=0.019) and PB pre-harvest CD34+ <20 cells/μL (p<0.001). No mobilisation-related mortality was reported. **Conclusion:** This study highlights the importance of early identification of patients at risk of poor mobilisation for timely intervention using enhanced strategies, such as upfront plerixafor, to maximise stem cell yield and improve transplant success.

Keywords:
lymphoma, mobilisation failure, stem cell mobilisation

Poster Presentation 15 (PP15)

Evaluation of *in Vitro* Synergistic Effects of Licorice Aqueous Extract and Fosfomycin Against *Escherichia Coli*

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Abstract:
Introduction: Antimicrobial resistance (AMR) represents a critical public health threat that compromises the effectiveness of conventional antibiotics, particularly in the treatment of infections caused by *Escherichia coli* (*E. coli*). Licorice (*Glycyrrhiza glabra*) is a traditional medicinal plant recognized for its medical values. Fosfomycin is a broad-spectrum antibiotic that inhibits bacterial cell wall synthesis but faces declining efficacy due to emerging resistance. To evaluate the in vitro synergistic effects of licorice aqueous extract combined with fosfomycin against *E. coli* ATCC 53498, particularly in relation to biofilm disruption and antimicrobial efficacy.
Methods: Checkerboard, time-kill, and biofilm formation assays were used to assess the combination's effects. Minimum inhibitory concentrations (MICs) were determined, and fractional inhibitory concentration index (FICI) values assessed drug interaction. Anti-biofilm activity was measured using crystal violet staining in a microplate format.
Results: The checkerboard assay showed FICI value, 1 which is interpretated as partial synergy, while time-kill assay demonstrated its bactericidal activity over 24 hours. The combination also significantly reduced biofilm biomass, indicating potential against biofilm-related resistance.
Conclusion: The combination of licorice aqueous extract and fosfomycin exhibited potent synergistic effects against *E. coli*, significantly enhancing bacterial inhibition and biofilm disruption *in vitro*.

Keywords：
Antimicrobial resistance, Synergism, Checkerboard, Biofilm

Poster Presentation 16 (PP16)

Experimental Study on the Antibacterial Effect of Maackiain Against *H. pylori* G27 Strain

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Introduction: The increasing antibiotic resistance of *Helicobacter pylori* (H. pylori) has compromised the effectiveness of standard treatments, creating a need for novel antimicrobials. Maackiain, a flavonoid from *Sophora tonkinensis*, has shown promising antibacterial activity. This study investigates its effects against the *H. pylori* G27 strain. **Methods:** The minimum inhibitory concentration (MIC) of Maackiain against *H. pylori* G27 was determined using broth microdilution. Cytotoxicity was assessed in GES-1 gastric epithelial cells. The study also evaluated Maackiain's impact on biofilm formation, intracellular reactive oxygen species (ROS), and bacterial morphology using standard assays and microscopy. **Results:** Maackiain demonstrated strong antibacterial activity with MIC values of 4–8 μg/mL. Cytotoxicity assays showed low toxicity toward GES-1 cells (IC50 >512 μg/mL), indicating a favorable therapeutic margin. Maackiain inhibited *H. pylori* biofilm formation in a dose-dependent manner, elevated bacterial ROS levels, and induced morphological damage. **Conclusion:** Maackiain exhibits potent anti-*H. pylori* activity, likely through oxidative stress induction and disruption of bacterial structure, with minimal cytotoxicity. These findings suggest Maackiain as a potential candidate for new *H. pylori* treatments.

Keywords:
H. pylori, Maackiain, Antibacterial activity, minimum inhibitory concentration, Reactive oxygen species

Poster Presentation 17 (PP17)

Pilonidal Sinusitis in A Young Adult: A Rare Presentation Managed with The Limberg Approach

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Introduction:
Pilonidal sinus disease (PSD) is a chronic inflammatory condition affecting the sacrococcygeal region in young adults. Conservative treatments may fail hence the Limberg flap proved to be an effective approach in minimizing recurrence and optimizing
postoperative outcomes which is highlighted in this case.

Case presentation
A 22-year-old male was presenting with painful swelling, redness, and intermittent drainage in the sacrococcygeal region. His symptoms persisted despite being given antibiotics and local wound care. Upon physical examination it was revealed an infected pilonidal sinus with abscess formation was present prompting surgical intervention.

Management of Pilonidal Sinus Disease
The patient underwent Limberg flap surgery including complete excision of sinus tissue, rhomboid flap rotation for tension-free closure and drain placement and layered suturing to aid healing. Patient had to remain in a prone position for three days post-surgery. Regular dressing changes, drainage removal when output was <5 mL and suture removal after two weeks was done. The patient was advised to avoid strenuous activities for one month.

Outcome of patient
During the 6 month follow up, the patient had shown improved mobility, complete wound healing with no infection and no signs of recurrence.

Discussion
The Limberg flap reduces recurrence and improves healing outcomes as highlighted in this case. The Limberg Flap is beneficial for its lower recurrence rates, reduced postoperative pain and faster recovery.

Conclusion
This case highlights the importance of early surgical intervention in recurrent pilonidal sinusitis. The Limberg flap is overall a better approach compared to the traditional method strategies.

Keywords
Pilonidal sinusitis, Limberg flap, young adult, surgical excision, recurrence prevention, rhomboid flap.

Poster Presentation 18 (PP18)

Prevalence of Nomophobia and its Association with Fear of Missing Out and Loneliness Among the Residents in Klang Valley, Malaysia

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Introduction: Nomophobia, or 'NO MObile PHone phoBIA,' refers to the fear of being without access to a smartphone. With smartphones now central to daily life, nomophobia is emerging as a modern-age disorder linked to growing mobile dependency. This study aims to assess the prevalence of nomophobia and its association with socio-demographic and socio-economic factors, loneliness, and fear of missing out (FoMO) among Klang Valley residents. **Methods**: A community-based cross-sectional study was conducted from 13th to 20th February 2025 among 409 residents aged 18 years and above, recruited through convenience sampling. A validated questionnaire collected data on socio-demographics, the Nomophobia Questionnaire (NMP-Q), UCLA-3 Item Loneliness Scale, and the FoMO Scale. Data were analysed using chi-square tests with IBM SPSS version 27. **Results:** Most participants were young adults (87.8%), female (61.1%), Malaysian nationals (83.9%), and students (66.7%), with many from the B40 (46.0%) and M40 (35.2%) income groups. Moderate (53.5%) and severe (23.7%) nomophobia levels were common. Nomophobia severity was significantly associated with education level ($p=0.040$), with higher rates among those with diploma/degree or higher education; loneliness ($p=0.002$), with more severe nomophobia among lonely individuals; and FoMO ($p<0.001$), with greater nomophobia in those with moderate to high FoMO. No significant associations were found with gender, age, nationality, marital status, employment, or income. **Conclusion**: The widespread prevalence of nomophobia in the community is concerning, notably in the high-risk group of people with higher education, experiencing increased loneliness and those with Fear of Missing Out. These findings highlight the urgent need for interventions, including structured digital detox programs, to encourage balanced smartphone use and address underlying psychosocial factors.

Keywords: Nomophobia, Loneliness Scale, Fear of Missing Out (FoMO), Digital detox.

Poster Presentation 19 (PP19)

Risky Pleasures – Inguinal Hematoma in an Intravenous Drug User Is Not Always a Mycotic Aneurysm

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Introduction

Intravenous drug use (IVDU) is associated with various local and systemic complications. Among them, inguinal hematomas can clinically resemble mycotic aneurysms, which demand urgent intervention. Differentiating between these is crucial for timely and appropriate management. This case report illustrates such a diagnostic challenge.

Case Presentation

A 46-year-old male with a history of IVDU, retroviral disease, and hepatitis B/C co-infection presented with a painful, expanding, foul-smelling, non-pulsatile left inguinal swelling following heroin injection. Imaging revealed a large, partially liquefied hematoma and thrombosis of the superficial femoral vein, with no arterial involvement. Surgical evacuation and targeted management were carried out.

Management of Haematoma

Ultrasound and CT angiography confirmed a hematoma without arterial injury. Surgery involved hematoma evacuation, ligation of a bleeding great saphenous vein, and debridement of purulent tissue. Postoperative care included culture-guided antibiotics and anticoagulation therapy.

Outcome

The patient showed good recovery, regaining mobility with the aid of a walking frame, and had no major complications post-treatment.

Discussion

IVDU can lead to pseudoaneurysms and hematomas in the femoral region. While signs like fever, pulsatility, and infection often point toward a mycotic aneurysm, this case lacked those features. Imaging played a pivotal role in distinguishing a hematoma from more serious vascular pathology, allowing for conservative surgical intervention.

Conclusion

Inguinal swellings in IVDU patients should be evaluated carefully, as not all cases are due to mycotic aneurysms. Clinical judgment, supported by imaging, is essential to avoid unnecessary invasive interventions and ensure effective treatment.

Keywords

Intravenous drug use (IVDU), inguinal hematoma, mycotic aneurysm, femoral vein thrombosis, CT angiography, saphenous vein ligation, surgical evacuation, differential diagnosis.

Poster Presentation 20 (PP20)

Artificial Intelligence in Surgical Decision-Making: Opportunities, Challenges, and Future Directions

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Artificial Intelligence (AI) is revolutionizing surgical decision-making by integrating data-driven precision, real-time analytics, and clinical decision support across the surgical continuum—from preoperative planning to intraoperative navigation and postoperative management. This review explores the expanding role of AI technologies in enhancing surgeon performance, minimizing intraoperative risks, and improving patient outcomes. In the intraoperative setting, AI—particularly machine learning and computer vision—enables recognition of anatomical structures, image-guided navigation, and early detection of complications. These tools assist in tailoring surgical strategies to individual patient profiles by leveraging electronic health records, imaging data, and intraoperative sensor inputs. Predictive analytics have further enabled personalized risk assessments, thereby enhancing surgical preparedness and adaptability. Beyond technical enhancement, AI offers system-level benefits such as workflow optimization and resource allocation. Despite these promising applications, several critical challenges remain. These include the interpretability and generalizability of AI models, the need for high-quality, standardized datasets, and addressing ethical issues such as data privacy, bias, and liability in automated decision-making. The review emphasizes the importance of collaborative integration between surgeons, data scientists, engineers, and regulatory bodies to ensure AI tools are clinically validated, ethically sound, and contextually appropriate. While AI is not a replacement for clinical judgment, its responsible implementation has the potential to significantly augment surgical precision, safety, and efficacy. Continued research, clinical trials, and policy development are essential to align the future of AI with the core principles of patient-centered surgical care.

Key Words:
Artificial intelligence, Intraoperative decision-making, Surgical AI, Image-guided surgery.

Poster Presentation 21 (PP21)

Breaking the Silence: Addressing Child & Adolescent Mental Health Challenges in Malaysia

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Introduction: Mental health is a growing public health concern among children and adolescents globally. In Malaysia, rising prevalence rates are evidenced by persistent societal stigma and difficulty to seek help, particularly among adolescents. **Methods**: A narrative review was conducted analyzing children and adolescents' mental health data in Malaysia. Sources included Ministry of Health reports, WHO and United Nations publications, and peer-reviewed academic studies published between 2016 and 2024. The review focused on mental health challenges, stigma, and help-seeking behaviors among Malaysian children and adolescents. **Results**: Approximately 1 in 3 Malaysians experience mental health challenges, with adolescents aged 16–19 and individuals from low-income households being heavily affected. Stigma remains a significant barrier to seeking help, particularly among male students and minority groups. Government initiatives such as the Healthy Mind Programme and school-based counseling services have been introduced, but their effectiveness is limited due to persistent stigma and low levels of mental health literacy. These findings highlight the urgent need for targeted stigma reduction strategies and the integration of mental health education into school curricula. **Conclusion**: Improving child and adolescent mental health in Malaysia requires substantial efforts focused on stigma reduction, community engagement, and mental health education. Enhancing access to culturally sensitive mental health services and integrating mental health literacy into school programs can foster a more supportive environment, empowering children and adolescents to seek help early and without fear.

Keywords
Child and Adolescent Mental Health, Help-Seeking Behaviour, Mental Health Stigma, School-Based Interventions.

Elective Poster Presentation 1 (EP1)

Investigating the Lack of Synergistic Antimicrobial Activity Between Chili and Garlic Extracts Against *Staphylococcus aureus*: Integrating Laboratory Findings with Molecular Docking Analysis

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Abstract:

Introduction: Natural antimicrobials such as garlic (Allium sativum) and chili (Capsicum spp.) are widely recognized for their potent activity against bacterial pathogens, including *Staphylococcus aureus*. Their primary bioactive compounds—allicin from garlic and capsaicin from chili— have shown significant individual efficacy against *S. aureus* in various studies. However, the effect of combining these two plant-derived extracts against *S. aureus* remains largely unexplored. In particular, the potential for a synergistic interaction that could enhance antibacterial efficacy or overcome resistance mechanisms in antibiotic-resistant *S. aureus* strains, such as MRSA, has yet to be systematically investigated. Methods: Chili and garlic extracts were obtained using standard solvent-based extraction techniques. Their antimicrobial activity—both individually and in combination—was evaluated against *Staphylococcus aureus* using the disc diffusion method. The minimum inhibitory concentration (MIC) was estimated by analyzing inhibition zones across a range of concentration ratios. To assess potential synergistic or antagonistic effects, combination studies were conducted at 1:1, 1:2, and 2:1 ratios based on the MIC values obtained. Additionally, literature-based phytochemical profiling and mechanistic insights were explored to understand the possible routes of antagonistic interaction between the bioactive constituents of chili and garlic crude extracts. Results and Discussion: Both garlic and chili extracts exhibited strong individual inhibitory activity against S. aureus at MICs of 200 mg/mL and 250 mg/mL, respectively. Surprisingly, the combined extract showed no zone of inhibition, indicating an antagonistic interaction. Literature-supported phytochemical analysis suggests possible interference between key active compounds, such as allicin and capsaicin, potentially due to overlapping or counteracting mechanisms targeting bacterial cell walls, enzymes, or redox pathways.

Conclusion: Although garlic and chili extracts are individually effective against S. aureus, their crude combination results in an antagonistic effect, likely due to complex phytochemical interactions. This highlights the importance of understanding compound compatibility in natural antimicrobial formulations. Future work involving compound isolation and mechanistic studies is needed to clarify the biochemical basis for this observed antagonism.

Keywords:

Staphylococcus aureus, Synergistic antimicrobial activity, Antagonistic effect, Disc Diffusion Method, Capsaicin, Allicin

Elective Poster Presentation 2 (EP2)

Measuring Knowledge On Menstrual Health A Research Project

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Abstract:

Introduction: This study assesses menstrual health awareness among women in Bandar Saujana Putra through a questionnaire along with pre- and post-intervention surveys at Tenby International School. It aims to address stigma, improve hygiene practices, and encourage informed, open discussions on menstrual and reproductive health. **Methodology:** Study Design: T-test with 30 Tenby International School students (ages 10-17) before and after menstrual health education. Cross-sectional study with 110 women (ages 18-45) in BSP. Convenience and random sampling used.
Inclusion Criteria: Pubertal schoolgirls (10-17) and women (18-45) in BSP. **Results:** According to data obtained from 110 respondents from the public, it is shown that 32% had no prior knowledge before their first menstruation. Notably, 29% believe that women should avoid physical activity during menstruation, reinforcing prevalent myths. The intervention led to a notable improvement in menstrual health awareness among students. Understanding of the correct frequency for changing sanitary pads (every 4–6 hours) increased from 40% to 66.7%. Awareness that women can and should continue physical activities during their periods rose from 42.9% to 67.9%. Recognition that regular exercise helps reduce menstrual cramps increased significantly from 32.1% to 92.9%. These findings suggest that comprehensive menstrual education is necessary to promote healthy practices and empower individuals. **Conclusion:** The research evaluates whether that effective menstrual health management (MHM) reduces health risks, knowledge level, and low self-esteem. Findings emphasize the importance of investing in menstrual health education and infrastructure to advance gender equality and enhance overall well-being for individuals of reproductive age.

Keywords: *Menstruation, Knowledge, Awareness, Comparison, Hygiene practices*

Elective Poster Presentation 3 (EP3)

Dietary Patterns, Physical Health Status, and Health Care Access among Orphanage Children in Selangor, Malaysia: A Descriptive Study

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Abstract:
Nutrition, physical well-being and access to medical care are cornerstones of child development, yet their interplay in orphanage settings remains largely uncharted. This descriptive study examines how general health status, dietary factors, and physical fitness relate to healthcare access among orphanage children in Selangor, Malaysia. This study used a descriptive cross-sectional design among orphanage children (9-18 years) in Selangor selected by cluster sampling. We collected anthropometric data, daily nutritional intake, physical examinations, and a health-care access questionnaire. Data were summarized with descriptive statistics and associations tested via chi-square and logistic regression. For General health- Out of 103 respondents, 82.5% rated their overall health as "good" or "very good" (27.2% very good, 55.3% good), while 17.5% described their health as "fair." For health care services- Of the 103 participants, 85.4% reported being "satisfied" or "very satisfied" with the health services (35.9% very satisfied, 49.5% satisfied), 10.7% were neutral, and 3.9% felt unsatisfied. Nutritional diet- While most children (57.3%) eat at least two meals a day (52.4% two meals, 4.9% three or more), only 25.2% report that every meal is nutritious and balanced. A further 56.3% get balanced meals "sometimes," and 18.5% seldom or never receive a truly balanced diet—indicating that overall dietary quality is suboptimal. Physical activity-Overall, 76.7% of children exercise every day or a few times a week (30.1% everyday, 46.6% weekly), while 23.3% are rarely or never active. Importantly, 92.2% have access to an outdoor or indoor play area, suggesting the physical environment generally supports activity. Children with good health-care access showed a slightly lower rate of normal physical health (36.1% vs. 50.7%) and a modestly higher combined rate of undernutrition (44.4% vs. 32.8%) than those with poor access, but this difference was not statistically significant ($\chi^2(3)=5.06$, $p=0.168$). Thus, no clear association between health-care access and physical health emerged in this sample.

Keywords:
Orphanage Health Challenges**,** Access to Healthcare Services**,** Malnutrition and Nutritional Status**,** Barriers to Healthcare Access**,** Physical Health Status Assessment

Elective Poster Presentation 4 (EP4)

A Quasi-Experimental Study On The Impact Of Digital Detox On Smartphone Addiction And Well-Being Among Medical Students

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Abstract:
Introduction: Smartphone addiction is increasingly common among medical students and is associated with poor sleep, reduced well-being, and impaired academic focus. In Malaysia, nearly half of pre-clinical medical students are at high risk, yet effective interventions are limited. This study evaluated the effectiveness of a digital detox program in reducing smartphone addiction and related problems among pre-clinical students at MAHSA University. **Methods** This quasi-experimental study used convenience sampling with random assignment to experimental (n=32) and control (n=34) groups. The experimental group underwent a 1-week digital detox intervention, gradually reducing screen time from 8 to 3 hours daily. Data were collected at four time points for the experimental group (pre-intervention, day 1, day 7, and one-week post-intervention) and at three points for the control group. Parameters assessed included smartphone addiction (SAS), social media and gaming addiction, nomophobia, emotional well-being, physical activity, and sleep quality. Analyses were performed using SPSS v30; significance was set at $p<0.05$. **Results** Paired t-tests showed significant improvements in SAS ($p=.001$), social media use ($p=.048$), nomophobia ($p=.004$), sleep quality ($p<.001$), and well-being ($p<.001$) post-intervention and after the retention period. No significant changes were observed in gaming or physical activity. Repeated measures ANOVA revealed a significant reduction in SAS over time ($p=0.004$). Between-group comparisons showed significant improvements in SAS, well-being, and sleep quality in the experimental group compared to controls ($p<.05$). **Conclusion:** The digital detox intervention significantly reduced smartphone addiction and improved several aspects of health and well-being among pre-clinical medical students. These results indicate that structured digital detox programs can be a practical strategy for managing smartphone overuse, fostering healthy technology habits, and enhancing students' overall quality of life.

Keywords:
Digital detox, Smartphone addiction, well-being, Nomophobia, sleeping quality

Elective Poster Presentation 5 (EP5)

An *In Vitro* Analysis of Antibiofilm Activity of Chitosan Nanoparticles against *Candida auris*

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Abstract:

Introduction: *Candida auris* (*C. auris*) is an emerging multidrug-resistant fungal pathogen known for its persistence in clinical environments. The ability of *C. auris* to form biofilm represents one of the major pathogenetic traits that causes therapeutic failure due to its resistance to antifungal agents. This study aims to investigate the antifungal and antibiofilm properties of CNPs against *C. auris* biofilm. We have also compared the antifungal and antibiofilm activities of other *Candida* species with *C. auris.* **Methods**: Gram stain was performed for preliminary identification of the morphology of the *Candida* species. Chitosan nanoparticles were synthesised via ionic gelation using sodium tripolyphosphate (TPP) as the cross-linker. The synthesized CNPs was characterised using Fourier Transform Infrared Spectroscopy (FTIR). To assess antifungal efficacy, the Kirby-Bauer disk diffusion method was performed. The assessment of antibiofilm activity was performed by using the crystal violet (CV) assay. **Results:** The FTIR spectra revealed peaks at 1551 cm^{-1} and 1152 cm^{-1} representing the primary amine group and the backbone structure of chitosan, respectively. Micrographs from Gram stain showed budding yeast cells and pseudohyphae characteristic of the *Candida* species. The CNPs at 5 mg/mL showed the highest growth inhibition in all the *Candida* species, with the zone of inhibition (ZOI) ranging from 19 ± 0.18 mm and 35 ± 0.12 mm, respectively. The CV assay revealed the highest reduction in the biofilm mass upon treatment with CNPs at 10 mg/mL and 5 mg/mL. However, the reduction in biofilm was not significant when compared to fluconazole ($p<0.005$). **Conclusion:** The synthesis of CNPs using ionic gelation is simple and cost-effective. The study highlights the potential of CNPs at 5 mg/mL as a promising antifungal and antibiofilm agent against *C. auris* and all the tested *Candida* species.

Keywords:

Candida auris, Biofilm, Chitosan, Nanoparticle, Ionic Gelation, SMIC

Elective Poster Presentation 6 (EP6)

Molecular Detection of *Acinetobacter baumannii* by Non-Protein Coding RNA-Mediated Monoplex Polymerase Chain Reaction

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Abstract:

Background: *Acinetobacter baumannii* is a gram-negative, non-fermenting opportunistic pathogen that has been identified by the World Health Organization as a high-priority organism and is included among the ESKAPE pathogens. This classification reflects its high incidence of multidrug-resistant strains and its significant role in healthcare-associated (nosocomial) infections. Accurate detection of this bacterium is essential for effective clinical treatment. Non-protein coding RNAs (npcRNAs) are genetic sequences that do not code for proteins in bacteria. These molecules exhibit higher stability compared to protein-coding RNAs. **Methods:** In our previous study, a novel npcRNA gene, *AbaR11* unique to *Acinetobacter baumannii* was identified. In this study, monoplex PCR was used to evaluate its specificity and sensitivity to *A. baumannii*. A gradient Polymerase Chain Reaction (PCR) was done to determine the ideal annealing temperature followed by specificity and sensitivity tests. Bacteria that were tested in this specificity test include, *Acinetobacter baumannii, Serratia marcescens, Salmonella typhimurium, Providencia stuartii, Bacillus subtilis, Bacillus cereus, MRSA, Streptococcus pyogenes*, *Streptococcus epidermidis and Listeria monocytogenes.* **Results:** Gradient PCR identified an optimal annealing temperature of 45.9 °C for *A. baumannii.* In the PCR assay, amplification was observed only in *A. baumannii,* with no bands detected in other bacterial species, and detection was achieved up to 9pg⁄ul of genomic DNA. **Conclusion:** The results support that the gene is specific and sensitive to *A. baumannii.* The PCR test used in this study is an experimental detection method that can be cloned for other npcRNA-mediated detection assays and has the potential for clinical diagnostic development.

Keywords:
ncRNA, *Acinetobacter baumannii*, molecular diagnostics, Specificity PCR, Sensitivity PCR

Elective Poster Presentation 7 (EP7)

Raising Awareness on Reusable Menstrual Products Exploring Knowledge Attitudes and Practices of Reusable Menstrual Products for Sustainable Health and Gender Equality in Suport of the UN SDGs

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Abstract:

Introduction: Disposable menstrual products contribute to health risks and environmental waste. Reusable alternatives offer sustainable, cost-effective options but are underused. This study assessed knowledge, attitudes, and practices (KAP) regarding reusable menstrual products among MAHSA University students and staff, in line with the UN Sustainable Development Goals. **Methods:** A cross-sectional study was conducted from December 2024 to May 2025 among 374 students and staff (aged 18–60) at MAHSA University. Data were collected using structured online questionnaires administered to people of all age group above 18.The data were analysed using SPSS, employing descriptive statistics and inferential tests including ANOVA, and Chi-square tests to assess changes in KAP levels. **Results:** A total of 374 participants completed the study, with the majority being in the young age group (89.3%), followed by middle-aged (5.9%) and older participants (4.8%). A statistically significant difference in attitudes was found across age groups regarding the perception that reusable menstrual products are hygienic and safe ($p = 0.013$), with older participants showing greater trust. While knowledge scores increased with age, this trend was not statistically significant. **Conclusion:** The study highlights a significant age gap in awareness and acceptance of reusable menstrual products, which can be effectively addressed through targeted educational interventions.

Keywords:

Reusable menstrual products, KAP study, menstrual hygiene, sustainability, gender equality

Elective Poster Presentation 8 (EP8)

Evaluating the Awareness and Knowledge Gaps of Polycystic Ovary Syndrome (PCOS) Among University Students in Klang Valley

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Abstract:
Introduction: PCOS affects 5–10% of reproductive-age women but is often underdiagnosed due to low awareness. University students, a key group for health education, show significant knowledge gaps. This study assesses PCOS awareness in Klang Valley students to promote early intervention and reduce long-term health risks. **Methods:** A cross-sectional study was conducted among 408 university students aged 18 and above from various faculties across Klang Valley to assess awareness and knowledge gaps about Polycystic Ovary Syndrome (PCOS). Participants were selected via convenience sampling and completed a self-administered online questionnaire through Google Forms. The survey covered demographics, awareness, and knowledge of PCOS, including its risk factors, symptoms, complications, and treatment options. Data were analysed using SPSS Version 23 with descriptive and inferential statistics. **Results:** Among 408 respondents, 69.1% were female and 52.2% aged 21–23. PCOS awareness was 39.7%. While most knew about androgens and basic reproductive facts, only 23.5% knew women produce testosterone. Though 73% recognized irregular periods as a symptom, 82.4% were unsure if PCOS can fully stop menstruation. **Conclusion:**This study highlights significant gaps in knowledge and varying levels of awareness regarding Polycystic Ovary Syndrome (PCOS) among university students across Klang Valley. These findings highlight the importance of integrating targeted educational and awareness programs on PCOS into university health initiatives, emphasizing the need for multidisciplinary approaches in addressing knowledge gaps and promoting early intervention in public health.

Keywords:
Polycystic Ovary Syndrome (PCOS), Awareness, Knowledge gaps, Klang Valley, Student health awareness

Elective Poster Presentation 9 (EP9)

Antimicrobial Potential of Human-Isolated Lactic Acid Bacteria in the Control of Nosocomial Infections

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Abstract:
Introduction: Nosocomial infections caused by multidrug-resistant (MDR) pathogens pose a significant threat in modern healthcare due to rising antimicrobial resistance and limited treatment options. Alternative strategies, particularly those involving natural antimicrobials, are urgently needed. This study aimed to evaluate the antimicrobial potential of various human-isolated lactic acid bacteria (LAB) against nosocomial pathogens using the agar plug diffusion assay. **Methods:** The isolates included *Enterococcus lactis* (S43, S45PFA), *Pediococcus acidilactici* (S32PERI B), *Pediococcus pentosaceus* (S32PERI A), and *Weissella confusa* (S21). The agar plug diffusion assay was performed and the inhibition zones formed around each plug were measured to determine the antimicrobial activity of each isolate. **Results:** Against *Staphylococcus aureus*, *Pediococcus pentosaceus* (S32PERI A) showed the highest inhibition zone at 27.5 mm. For *Klebsiella pneumoniae*, S32PERI A also demonstrated the highest inhibition zone of 19 mm. Against MRSA, *Enterococcus lactis* (S43) and *Weissella confusa* (S32PW) both exhibited inhibition zones of 23 mm. Similarly, against MSSA, S32PERIW showed a 23 mm inhibition zone. For *Staphylococcus epidermidis ,*29(III), the positive control remained the most effective. **Conclusions:** These results suggest that human-isolated LAB shows promising antimicrobial potential and could serve as a natural alternative for the control of nosocomial infections.

Keywords:
LAB, Nosocomial, Antimicrobial, Multi-drug resistance

Elective Poster Presentation 10 (EP10)

Association Between State of Mental Health and Cancer Risk Factors Among Adult Population in Selangor and Kuala Lumpur

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Introduction: Cancer and mental health disorders are major global health concerns. Emerging evidence suggests a bidirectional link between mental health status and modifiable cancer risk factors. Mental health conditions such as depression, anxiety, and stress may influence behavioural choices including smoking, alcohol use, physical inactivity, and poor diet, all of which are associated with increased cancer risk. However, studies focusing on this relationship in the Malaysian context remain limited. Methods: A cross-sectional study was conducted among 333 adults aged 18 and above in Selangor and Kuala Lumpur during cancer screening events organized by the National Cancer Society of Malaysia. Participants completed the Depression, Anxiety, and Stress Scale-21 (DASS-21) to assess mental health status. Cancer risk factor data were consisted of age, smoking status and physical activity. Data were analysed using descriptive statistics and inferential tests including Chi-square, Mann–Whitney U, and Kruskal–Wallis tests with SPSS version 29.0. Results: Associations were found between mental health scores and physical activity ($p < 0.05$), but no associations were found between mental health condition and age or smoking status. Although not all associations reached statistical significance, patterns suggest an overlapping risk profile influenced by mental health status. Conclusion: This study highlights a potential association between mental health conditions and cancer risk factors in a Malaysian adult population. These findings support the integration of mental health screening into cancer prevention strategies, underscoring the need for multidisciplinary approaches in public health interventions.

Keywords
Mental Health, Cancer Risk Factors, Depression, Anxiety, DASS-21

Elective Poster Presentation 11 (EP11)

Green or Grim: An Investigation on Multi-drug-resistant *E. coli* isolates present on Lettuce in Wet Markets

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Abstract:

Introduction: Food is not just nourishment but also reflects culture and tradition. As plant-based diets grow in popularity, concerns about food safety, especially regarding antimicrobial-resistant bacteria like *E. coli* have become more serious. In Malaysia, rising rates of *E. coli* contamination, particularly in raw vegetables like lettuce, have alarmed health officials. Factors such as poor hygiene in wet markets, improper washing, cross-contamination, and organic farming practices contribute to the risk. This report explores the prevalence of multidrug-resistant *E. coli* on lettuce in Selangor to highlight the hidden dangers in our food and encourage safer eating habits. **Methods:** This study will collect 39 lettuce samples from 10 vendors and transport them in ice boxes to the Mahsa Laboratory. *E. coli* will be isolated through culturing and identified using selective media and the indole test. Antimicrobial resistance will be assessed using the Kirby-Bauer disk diffusion method, and Extended-spectrum beta-lactamase (ESBL) strains will be screened and confirmed using CLSI-recommended disc diffusion tests. Biofilm formation will be evaluated using the tube method. All data will be analyzed using descriptive statistics in SPSS and presented through graphs and charts. **Results:** Out of 39 lettuce samples, 34 (87.18%) showed growth of suspected *E. coli* on EMB agar, with 84% appearing as purple lactose fermenters and 14.67% exhibiting a green metallic sheen. Gram staining and motility confirmed all lactose-fermenting colonies were Gram-negative, motile bacilli. Indole testing identified 54% (34/63) as *E. coli*. Antimicrobial testing showed high resistance to Amoxicillin-Clavulanate (82.35%), followed by Tetracycline (47.06%) and Cefotaxime (38.24%). Seventeen isolates were multidrug-resistant, including 14 Extended-spectrum beta-lactamase (ESBL) producers and 3 Carbapenem-resistant Enterobacterales (CRE). Most MDR isolates formed moderate to strong biofilms, with RBF values ranging from 105.1% to 241.4%. Conclusion: This study reveals a high prevalence of *Escherichia coli* contamination in lettuce from wet markets, with over half of the isolates showing multidrug resistance. The presence of Extended-spectrum beta-lactamase (ESBL) and Carbapenem-resistant Enterobacterales (CRE) strains, along with strong biofilm formation, underscores a significant food safety risk and highlights the urgent need for improved hygiene practices and antimicrobial resistance monitoring in fresh produce.

Keywords:

Wet Markets, Lettuce, *Escherichia coli*, Multidrug resistant

Elective Poster Presentation 12 (EP12)

Prevalence of Type 2 Diabetes Mellitus and its associated factors among the community members in Bandar Saujana Putra, Selangor, Malaysia

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Abstract:

Introduction: Diabetes Mellitus (DM), particularly Type 2, is a growing public health concern in Malaysia, with prevalence rates among the highest in Southeast Asia. Urbanization, sedentary lifestyles, and poor dietary habits are key contributors to this trend. However, localized data remains scarce, especially for suburban areas such as Bandar Saujana Putra. **Objective**: This study aims to determine the prevalence of Type 2 Diabetes Mellitus (T2DM) and explore its associated sociodemographic, lifestyle, and health-related risk factors among adults in the Bandar Saujana Putra community. **Method**: A cross-sectional study design has been employed, targeting adults aged 30 and above residing in Bandar Saujana Putra. Data has been collected using a validated, structured questionnaire and physical measurements (height, weight) to determine Body Mass Index (BMI). Factors such as age, gender, ethnicity, physical activity, sleep quality, comorbidities (e.g., hypertension, obesity, cardiovascular disease), family history, smoking, and alcohol consumption will be analyzed. A sample size of 194 participants has been recruited through convenience sampling. Statistical analysis will include descriptive statistics, chi-square tests, t-tests, and multivariate logistic regression using SPSS software. **Results**: Data were obtained on 194 adults who participated in the study, with age range from 30 to 60. The sample included 104 males (53.6%) and 90 females (46.4%). The prevalence of Type 2 Diabetes Mellitus in Bandar Saujana Putra was 13.4% (n = 26). Among those diagnosed with T2DM, 73.1% and 26.9% were seen in males and females respectively. Significant associations with T2DM were found in age 46 to 60 years, family history of T2DM, physical activity level, and hypertension. No significant associations were observed with ethnicity, body mass index (BMI), smoking status, alcohol consumption, sleep quality, or obesity. **Conclusion**: The study conducted in Bandar Saujana Putra found a T2DM prevalence of 13.4%, which is lower than that reported in recent studies. Significant associated factors included age, physical inactivity, hypertension, and family history of T2DM. These findings suggest the need for continuous monitoring and early intervention focusing on lifestyle modifications and high-risk groups.

Keywords:
Type 2 Diabetes Mellitus, Prevalence, Associated factors, Bandar Saujana Putra, Sedentary lifestyle,Body mass index.

Elective Poster Presentation 13 (EP13)

The Impact of Physical Activity On Mental Health of University Students

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Abstract:

Introduction: In today's society depression and anxiety are increasingly prevalent, and university students are even more sensitive for plain reasons. Even though physical activity is strongly promoted to have positive impacts on mental health, the degree and nature are underexplored. With this study we aim to assess the relationship between physical activity and mental health of university students in Malaysia. **Methods**: A cross-sectional study was conducted among university students to assess the relationship between physical activity and mental health. Each participant anonymously completed a questionnaire that included the Global Physical Activity Questionnaire (GPAQ), the Depression Anxiety Stress Scales-10 (DASS-10) and the WHO-5 Well-being Index. Data was analyzed using descriptive statistics and inferential analysis with Fisher's Exact Test via cross-tabulation. **Results**: The statistics demonstrated a significant correlation between physical activity and gender, physical activity and quality of life and mental status and quality of life. However, the relationship between physical activity and mental health did not reach statistical significance ($p = 0.215$). Nonetheless, the patterns imply potential benefits of physical activity on mental health. **Conclusion**: The data suggest a positive impact of physical activity on quality of life of university students and marked association between mental health and overall well-being. A direct association between physical activity and mental health was not statistically significant, however, the trends demonstrate a potential positive correlation between mental health and active lifestyle among university students.

Keywords:
Mental Health, Physical activity, Emotional distress, Quality of life, University students

Elective Poster Presentation 14 (EP14)

Prevalence of Psychological Stress Among Pre-Clinical Medical Students at MAHSA University

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Introduction:

Medical education is known to be one of the most academically demanding fields, especially during the pre-clinical years when students must adapt to intense academic and emotional challenges. Psychological stress—defined as the emotional strain resulting from perceived demands exceeding one's coping ability—is significantly more prevalent among medical students than their peers in other disciplines. Factors such as academic overload, high expectations, and a competitive learning environment contribute to increased levels of stress, potentially leading to anxiety, burnout, and decreased academic performance. **Methods:** This cross-sectional study will involve 139 pre-clinical (Year 1 and Year 2) medical students at MAHSA University. The sample size was calculated using Cochran's formula with a 95% confidence level and a 5% margin of error. Data will be collected via a structured online questionnaire, incorporating the Perceived Stress Scale (PSS) to measure psychological stress levels. Additional questions will gather demographic information, academic performance data, and coping strategies used. **Results:** The research will conclude the result under category of prevalence of psychological stress, stress level by gender, stress level by age group and stress level by income group. **Conclusion:** It is expected that a substantial proportion of students will report moderate to high stress levels, primarily due to academic demands. The study highlights the need for effective mental health support systems and targeted stress management programs to improve student well-being and academic success.

Keywords:

"Medical education" AND "psychological stress"