ISSN 0974-5319

Volume 5 Issue 5

IJCP

International Journal of Community Pharmacy

The Official Publication of ACPI

SPECIAL ISSUE

Scientific Proceedings of APSE International Conference on Translation of Value Education and Innovations in Health Sciences for Societal Transformation
30 - 31 January 2025
Sarada Vilas College of Pharmacy, Mysuru
Karnataka, India

www.acpisouth.in/ijcp-official-journal

Vol. 5 Issue No. 5 January 2025

SVCP – APSECON25

ISSN-0974-5319

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(ISSN-0974-5319)
The Official Publication of ACPI

EDITORIAL OFFICE
INTERNATIONAL JOURNAL OF COMMUNITY PHARMACY
The Official Publication of Association of Community Pharmacists of India [ACPI]
Secretariat & Communication Address
Sarada Vilas College of Pharmacy
Krishnamurthy Puram, Mysuru – 570004, Karnataka
Ph: 0821-4262415

Editorial

Dear Readers,

It is with immense pleasure and a deep sense of purpose that I present this special edition of the International Journal of Community Pharmacy. This issue is dedicated to showcasing the abstracts from the prestigious international conference on "Translation of Value Education and Innovations in Health Sciences for Societal Transformation", held in the historic city of Mysuru. This conference brought together thought leaders, researchers, and practitioners from across the globe to deliberate on how health sciences, education, and innovation can catalyze societal transformation.

The central theme of the conference reflects a vital convergence of disciplines—where value-based education meets cutting-edge innovations in health sciences, fostering an environment for profound societal impact. As pharmacists, educators, and healthcare professionals, our collective goal remains the same: to improve health outcomes, empower communities, and contribute meaningfully to societal progress. This special edition highlights the remarkable strides made in these areas.

A Glimpse into the Highlights

This special edition contains a collection of abstracts that embody the spirit of the conference. The topics covered are diverse yet interconnected, underscoring the multifaceted nature of health sciences and community pharmacy.

Key themes include:

• Innovative Pharmacy Practices: Presentations that showcase how community pharmacy is evolving to meet global health challenges through personalized medicine, digital health solutions, and expanded patient care roles.

• Value-Based Healthcare: Abstracts focused on integrating ethics, empathy, and equity into healthcare delivery, aligning with the principles of value education.

• Health Education for Transformation: Papers highlighting innovative educational strategies, including interdisciplinary approaches, to prepare future healthcare professionals for a rapidly changing world.

• Global Collaborations and Public Health Impact: Insights into successful partnerships and initiatives that have strengthened public health systems and improved health equity in various communities.

Acknowledgments

The success of this conference and the compilation of this special edition would not have been possible without the dedication and hard work of many individuals. My heartfelt thanks go to the organizing committee, keynote speakers, researchers, and reviewers who contributed to this endeavor. A special note of gratitude to our hosts in Mysuru for providing such an inspiring and hospitable environment.

Looking Ahead

The abstracts in this special edition are not just a reflection of the excellent work presented at the conference but also a call to action. They remind us of the transformative potential of combining education, innovation, and community-oriented healthcare practices. As you delve into these abstracts, I encourage you to think about how these ideas can be translated into actionable strategies within your own professional spheres.

Finally, I invite you, our readers, to join us in fostering collaboration and innovation in community pharmacy. Together, we can continue to advance the role of pharmacy in creating healthier and more equitable societies.

Happy reading!

Sincerely,
Dr. Hanumanthachar Joshi
Chief Editor
International Journal of Community Pharmacy

The relevance of value education for the societal transformation

Dr. Milind Parle
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The modern materialistic approach towards life may raise our standard of living but denies quality life and real happiness. The standard of living may be connected to a deluxe house (or a farm-house), a luxurious car, modern furniture and electronic gadgets one has accumulated by hook or crook. Whereas, the quality of life is related to the long-term happiness one gets at home independent of materialistic things. Long-term peace of mind and happiness are intimately connected to values, ethical lifestyle and spiritual orientation. In the modern World, because of population explosion, technological advancements, material comforts and selfish attitudes, one is tempted to follow the wrong path or adopt unfair means to accumulate wealth in search of happiness. Family, schools, universities and places of worship (like a church, gurudwara, mosque or temple) play an important role in inculcating ethical and moral values among Indian youths. Our educational institutions are producing qualified graduates but not good human beings. Society today is marked by violence, greed, theft, drug addiction and terrorism. Self-restraint, tolerance and discipline are found to be lacking among youth nowadays. The youngsters have not only become disobedient but often show disrespect towards the seniors/elders. Young individuals today, in general (barring a few exceptions), have become self-centered, mostly busy serving their interests and showing off. The desire for materialistic things and self-exhibition compels the youth towards immoral and criminal activities. The consequences of the degradation of moral values are turning out to be disastrous to society. Kidnappings**,** mysterious deaths, rapes, suicides, robberies, gambling, pick pocketing, stealing, and cybercrimes have all become matters of serious concern today. The author, in the capacity of the President, in addition to focusing his address on the causes and consequences of moral degradation, shall also attempt to provide remedial measures along with workable solutions to improve the scenario.

Translational research and pedagogy: A transformative approach to experiential learning and science communication through Socratic education

Dr. Srinivas Patnala
Faculty of Pharmacy, Rhodes University, South Africa

Scientific research outcomes are critical to develop relevant applications in human progress and societal transformation. However, based on observations gleaned from various research papers/abstracts/presentations disseminated in scientific forums – it is reported that there is indeed a crisis of reproducibility and repeatability of experimental methodologies as "more than 70% of researchers have tried and failed to reproduce another scientist's experiments and more than half have failed to reproduce their own experiments"1.

Indian academic institutions conducting post-graduate pharmaceutical research are hard-pressed to publish and present their scientific outcomes. Albeit the volume of research is conspicuous and exudes confidence in domestic/local circles, there is an underlying concern regarding the quality of research data that can stand international/peer scrutiny/evaluation. Importantly – reproducibility and repeatability of experimental results are often ignored since the data generation/collation/retrieval are more often the perpetual weak points. Consequently, these issues could be attributed to lack of structured research design, execution of experimental methodologies and is contributed owing to deficiency/inexperience in research supervision/guidance. Subsequently, the pertinent issues leading to data integrity that eventually resulting in mediocre pharmaceutical research causing debilitating impact on the overall quality of academic research.

Whilst India is being touted as "pharmacy of the World" – It is imperative that sustaining the claim should be done by sincere and concerted efforts to improve the quality of research and relevant skill sets through – Experiential learning methods based on the tenets of educational practices such as Vygotsky's - Zone of Proximal development, Socratic teaching and learning methods, hands-on/hand-held assistance with experimental techniques and epistemological approach to scientific literature.

Current perspectives of Natural Irisin Modulators in the management of diabetic retinopathy - Novel innovative transformation

Dr. Arunachalam Muthuraman
Associate Professor, Dept of Pharmacology, AIMST University, Bedong Kedah D.A, Malaysia

Irisin is a cleaved version of fibronectin type- III domain-containing protein 5 (FNDC5). The term i.e., irisin is coined by Boström and coworkers and it represents the Greek messenger goddess Iris. Currently, irisin is considered a myokine hormone. This Myokine is synthesized and secreted by skeletal muscles during/after the exercise process. The type- I transmembrane glycoprotein of FNDC5 also acts as a precursor for Irisin production. The browning of adipose tissue also elevates the irisin concentration due to the thermogenic action of adipomyokine. The evidence of physical exertion and irisin release in experimental animals is well known. However, a clear understanding of irisin's role in the retinal health and management of diabetic retinopathy (DR) is unclear. The circulatory level of plasma (also serum) irisin is lower in type- 2 diabetes mellitus associated DR patients. Currently, it is considered a novel biomarker for the diagnosis of DR. Natural modulator of irisin like caffeine enhances the production of irisin in muscles and thus facilitates the browning of white adipose tissue to beige adipose tissue. Brown and beige adipose tissue possesses the potential therapeutic role for type-2 DM treatment. Furthermore, phytochemicals & nutraceuticals like All-trans retinoic acid, genistein, cardamom, *Zataria multiflora*, ursolic acid, myricanol, flaxseed oil, ketogenic diet and Mediterranean diet have also been shown to raise the significant levels of circulatory irisin contents. Moreover, beta carotene a vitamin- A precursor makes retinoic acid formation in retinal tissue. Retinoic acid is known to induce the expression of irisin in skeletal muscle cells. Our previous findings evidenced that beta-carotene mitigates type- 2 DR and its visual complications via the regulation of blood-retina barrier functions. Our current findings are proven to reduce the DR progression via enhancing plasma irisin levels. Hence, this target has ample scope to explore the management of DR with various natural irisin modulators in various disorders especially aged and lack of muscular function associated disorders. However, more extensive studies are needed to prove the clinical benefit of this target. It will make novel innovative transformations for the health care system.

Keywords: Phytochemicals, nutraceuticals, ketogenic diet, muscular function, visual function.

Bioactives from fruits, vegetables and their health benefits

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Bioactive compounds are secondary metabolites that have many physiological effects such as antioxidant, anti-microbial, anti-diabetic, anti-cancer, anti-obese and reduction of cardiovascular complications in living organisms. Fruits and vegetables and their by-products are rich source of many bioactive compounds that are reported to prevent, delay or reduce the onset of chronic diseases in human beings. Most prominent bioactive components in fruits and vegetables and their by-products are classified into groups such as terpenoids, phenolic compounds, and glucosinolates. Bioactive compounds present in fruits and vegetables and their by-products are involved in imparting various health benefits. Efficacy of bioactive compounds must be tested by both *in-vitro* and *in vivo* methods and they need to be studied rigorously for their safety prior to application in foods. Our studies have shown that bioactive compounds extracted from various fruits and vegetables and their by-products have the potential to be used as nutraceuticals/ functional food ingredients.

Navigating research from academia to pharmaceutical industry and commercialization

Assoc. Prof. Dr. Mahibub Mahamadsa Kanakal
Director - Centre for Pharmaceutical Product Development
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Ipoh, Malaysia

Transition from academic research to the pharmaceutical industry, focusing on the commercialization of new drug products and services is needed among academia and students. Emphasizing the potential of herbal-based drug development, it covers the growing interest in herbal medicines for traditional use, cosmetics, botanical drugs and prescribed treatments. This talk will highlight opportunities for multidisciplinary research and how its outputs can be commercialized to meet market demands. We will discuss the challenges of scaling up these products while maintaining efficacy and safety and the importance of robust regulatory frameworks for commercialization. Additionally, opportunities for academic scientists to contribute innovative molecules or combinations to the industry will be addressed, highlighting the challenges faced by both academia and industry. The preference of industry to fund academic research or purchase research outputs due to time and cost constraints will also be considered, fostering collaboration and innovation opportunities. This talk will summarize the effects of commercialization-driven research on academia.

Key Words: Academia, Research, Industry, Commercialization

Bioprospecting: Translating medicinal plants into therapeutic innovations

Dr. Harsha V. Hedge
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Bioprospecting, the systematic exploration of biodiversity for new sources of chemical compounds, genes and other valuable resources has emerged as a critical pathway for pharmaceutical innovation. Medicinal plants, with their vast array of bioactive compounds, have been at the forefront of this process, offering therapeutic potential for a wide range of diseases. This field bridges ethnobotanical knowledge with cutting-edge technologies, including *in silico*, *in vitro* and *in vivo* validations and high-throughput screening, to identify novel drug candidates. Challenges such as sustainability, equitable benefit-sharing and regulatory frameworks must be addressed to ensure ethical and effective practices. In this direction, ICMR-NITM, Belagavi is trying to integrate traditional medicine and modern science through bioprospecting, which not only accelerates drug discovery but also reinforces the value of preserving biodiversity for future generations.

Understanding allergies- causes, symptoms, types and treatment.

Dr. A. K Gnanachandran
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Allergy is atopic reactions of individuals to normally harmless substances of the environment, food, drugs and chemicals causing inflammation. Inflammatory reactions occur all over the body like nose, eyes, skin and digestive systems. Allergic manifestations will affect the individual's normal life standards.

Ayurveda biology: An integrative approach in health management

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Abstract:

Ayurveda, an ancient and comprehensive system of medicine, advocates for a holistic approach to health and wellness by integrating physical, mental and spiritual dimensions. An integrative *Ayurveda* approach harnesses both disciplines strengths, enabling practitioners to address the multifaceted nature of human health with greater precision and personalization. A crucial component of this integrative approach is using polyherbal ghrita formulations, which combine medicinal herbs with ghee (clarified butter). These formulations are pivotal in enhancing the bioavailability and efficacy of the active ingredients. Ghee, known for its unique properties, is an excellent medium for nullifying toxins and facilitating the absorption of herbal constituents. Notable examples include *Ashwagandha Ghrita* and *Kaamdeva Ghrita*, revered for their *Vajikaran* potential. By incorporating these traditional formulations into contemporary health management practices, practitioners can provide more holistic and effective treatments that align with an individual's unique constitution, lifestyle and environmental factors. This approach promotes overall well-being by addressing the root causes of health issues rather than merely alleviating symptoms. Moreover, the synergy between *Ayurveda* and modern biology fosters a deeper understanding of the interconnectedness of bodily systems and the significant impact of lifestyle choices on health. Ultimately, this integrative approach holds great promise for advancing personalized medicine, preventive healthcare and sustainable health practices, improving health outcomes and quality of life.

Keywords: Polyherbal Ghrita formulations, Bioavailability, antitoxin, Effective treatment

Phosphodiesterases as an interesting drug target in Dementia

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Dementia is an organic brain disorder characterised by progressive loss of memory and intellectual abilities as primary features. Dementia of Alzheimer's disease (AD) is the most common form of dementia accounting for 60–65% of all cases followed by vascular dementia (VaD) around 23%. AD is complex neurodegenerative disorder, the pathological hallmarks of AD include the formation of extracellular plaques consisting of amyloid-β protein, intracellular neurofibrillary tangles of hyperphosphorylated tau proteins and presence of chronic neuroinflammation causing progressive decline in memory and cognitive functions. Whereas, cerebral hypoperfusion is primary cause of VaD. Till date no sure-shot remedy exists for dementia and the currently available drugs provide only symptomatic relief and are unable to stop the progression of the disease. So, there is a need to develop a molecule that not only provides symptomatic relief but also halt the progression of the disease. Although most of the present therapeutic strategies primarily aim at preventing the formation and accumulation of amyloid-β and tau phosphorylation. Beyond the plaque and tangle-related targets, other important pathophysiological features of dementia including molecular transport mechanism, oxidative damage, inflammation and glucose & lipid metabolism may also provide key therapeutic target to improve memory loss. Phosphodiesterases (PDEs) are group of enzymes that catalyse secondary messengers cAMP & cGMP and regulate their important physiological functions. So far 11 different families of PDEs have been identified and inhibitors of PDE-3; PDE-4 & PDE-5 are being clinically used for various disorders including heart failure, COPD, erectile dysfunction etc. Recently a significant number of preclinical studies have shown interesting reports on memory improving potential of PDE-inhibitors in dementia and few of them are in clinical trials at various stages. Therefore, Phosphodiesterases provide an interesting drug target in dementia and their inhibitors may be very useful molecules for the management of dementia of AD and other aetiologies.

Zebrafish as a model of metabolic disorders for herbal drug research & development

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Karnataka

The zebra fish (*Danio rerio*) has emerged as an indispensable model organism in pharmacology and toxicology research, particularly for evaluating the safety and efficacy of herbal drugs. Its high genetic homology to humans, small size, rapid development and transparent embryos enable real-time assessment of drug effects and toxicity. In the context of obesity—a growing global health challenge—zebra fish provide a robust platform to investigate the pharmacological activity of herbal compounds. Zebra fish models of diet-induced obesity (DIO) mimic human metabolic disorders, including lipid metabolism dysregulation, insulin resistance and inflammation. By leveraging these models, researchers can test the anti-obesity potential of herbal drugs, such as those derived from traditional medicinal plants, while simultaneously evaluating organ-specific toxicity and systemic effects. High-throughput screening methods and imaging techniques in zebra fish allow rapid identification of bioactive compounds and their mechanisms of action. This presentation will explore how zebra fish facilitates the discovery and development of safe and effective herbal therapies for obesity, highlighting their role in bridging the gap between traditional medicine and modern pharmacology.

Digital innovation tool - Pharmacodia global database for faster R&D

Dr. Sachin Marihal
Co-founder
SaSPinjara Life Science Pvt Ltd
Belagavi, Karnataka

AI-Enabled intelligence platform first-tier drug database offering a wealth of data insights across various pharmaceutical domains covering

Small Molecules, biologics, cell therapy, vaccine and many more including 63,308+ Drug data, 14,293,360+ Patents, 488,000+ Registration & Approval, 456,820+ clinical trials, 63,000+ items related to regulatory policies and Pharmacopoeias (USP, BP, EP, ChP, JP), Formulation prescriptions and excipient information, registration details of many Countries including DMF details.

Translating innovations in antimicrobial stewardship: Enhancing cancer care and societal transformation

Dr. Sameer Dhingra
Associate Professor & Head
Dept of Pharmacy Practice
NIPER, Bihar

The rising threat of antimicrobial resistance (AMR) in cancer care necessitates innovative solutions that translate into improved patient outcomes and societal transformation. This presentation showcases evidence-based strategies and innovations in antimicrobial stewardship, synthesized from four pivotal studies.

The findings highlight the critical need for personalized antimicrobial approaches, robust antimicrobial stewardship programs and continuous surveillance. By leveraging these innovations, healthcare professionals can mitigate the impact of AMR on cancer patient outcomes, reduce healthcare costs and promote societal transformation through improved health and well-being.

This presentation demonstrates how the translation of value education and innovations in health sciences can drive meaningful change in cancer care and beyond. By fostering a culture of antimicrobial stewardship and promoting interdisciplinary collaboration, we can enhance patient care, address the societal implications of AMR , contribute to a healthier and more sustainable future.

Artificial Intelligence in Higher Education – Challenges and Opportunities

Dr. Palaniswamy Sivanandy

Senior Lecturer, Pharmacy Practice, School of Pharmacy
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Abstract

Background: The emergence of Artificial intelligence (AI) can be traced back to the mid-20th century, with pioneering work in fields like computer science, mathematics and neurosciences. Early research focused on developing algorithms that could perform tasks that typically require human intelligence such as playing games, solving problems and understanding language. Over time, advancements in computing power, data availability and machine learning techniques have led to significant breakthroughs in AI, enabling applications in various domains, from self-driving cars to medical diagnostics.

Opportunities: Artificial intelligence rapidly transforms higher education, presenting exciting opportunities and significant challenges. AI-powered tools can personalize learning experiences, providing tailored feedback and resources to individual students. Intelligent tutoring systems can offer personalized guidance, while AI-driven analytics can help identify at-risk students and predict academic performance. Additionally, AI can automate administrative tasks, freeing up faculty time for teaching and research.

Challenges: However, the integration of AI in higher education also raises concerns. The potential for bias in AI algorithms can exacerbate existing inequalities and the reliance on technology may devalue human interaction and critical thinking skills. Data privacy and security are crucial as AI systems often rely on large amounts of teaching, learning and research data. Moreover, the rapid pace of AI development necessitates ongoing professional development for faculty and staff to effectively utilize and evaluate these technologies.

Conclusion: As AI continues to evolve, higher education institutions must carefully navigate these challenges and embrace the opportunities to create a more equitable, effective and personalized learning experience for all students.

Digital innovation tool: CYBER AIDD- AI tool for screening innovative drug targets and designing molecular structures.

Dr. Anil Kumar Ranadev
Chief Scientific Officer, SaSPinjara Life Science Pvt Ltd
Belagavi, Karnataka

AI platform that boosts efficiency in screening innovative drug targets and designing molecular structures for early-phase drug design.

Key benefits of Tool:

1) Provides opportunity for discovering potential FIC targets

2) Efficiently conducting SAR analysis of the latest active structures

3) Innovating structural core and lead molecule optimization

Features of the Cyber-AIDD platform:

I) CYBER-X-SAR (Target Screening + Latest reported SAR Mapping)

II) CYBER-X-Discovery (Molecular generation and evaluation Tool)

a) Cyber-X-Hit (Target based compound library generation)

b) Cyber-X-Lead (Lead compound Optimization)

These tools can benefit the institution in many ways and the three main points tool can help:

1. Improve the academic skills level

2. Improve the research output

3. Generate revenue for the institution

SCIENTIFIC ABSTRACTS

SOCIETAL TRANSFORMATION

S.NO	ABSTRACT NUMBER	PRESENTING AUTHOR	ABSTRACT TITLE
1	**APSECON/2025/ST/OP01**	Anirudh Joshi K	Wearable and Portable GPS Solutions in Dementia Management, Perceptions and Challenges - A Study on Attitudes of Family and Professional Care-Givers

VALUE EDUCATION

S.NO	ABSTRACT NUMBER	PRESENTING AUTHOR	ABSTRACT TITLE
1	**APSECON/2025/VE/EP01**	Shreyas R V	A Prospective Study On Generic Medication

TRADITIONAL KNOWLEDGE

S.NO	ABSTRACT NUMBER	PRESENTING AUTHOR	ABSTRACT TITLE
1	**APSECON/2025/TK/OP01**	Amulya S	“The Legacy Of Healing: Empowering Neurodegenerative Disorders Treatment Through Ancient Traditional Medicine”
2	**APSECON/2025/TK/EP01**	Madhushree K	Design And Analysis Of Herbal Hair Oil
3	**APSECON/2025/TK/EP02**	Chaithra G	Anti-fungal potentials of roots of Ixora coccinea
4	**APSECON/2025/TK/EP03**	Neha N	In vitro antioxidant and anticancer activity of C*issus quadrangularis Linn*. on human breast carcinoma cell lines

HERBAL DRUG TECHNOLOGY

S.NO	ABSTRACT NUMBER	PRESENTING AUTHOR	ABSTRACT TITLE
1	**APSECON/2025/HDT/OEP01**	Subhajit Ghosh	New Trends Of Click Chemistry In Drug Development And Designing.
2	**APSECON/2025/HDT/EP01**	Vinutha YP	Current Status Of Herbal Drugs In INDIA.
3	**APSECON/2025/HDT/OP02**	Mohammed Yusuf Malik Damani	Optimization And Evaluation Of *Jatropha Curcas* Seed Extract Ethosomal Gel Formulation For Antifungal Activity Using Central Composite Design
4	**APSECON/2025/HDT/OP01**	Rakesh SA	Development And Optimization Of Topical Nano Formulations Of *Adina Cordifolia* Bark And Leaf Using Central Composite Design
5	**APSECON/2025/HDT/OOP01**	Neethu Varghese	Lc–Ms Based Phytochemical Profiling Of Ethanolic Leaves Extract Of *Ipomoea Obscura*
6	**APSECON/2025/HDT/EP02**	Chandana S	Formulation and Evaluation of Murraya koenigii and Moringa oleifera Leaves (L) Gutika
7	**APSECON/2025/HDT/EP03**	Deepika S B	Formulation And Evaluation Of *Tamarindus Indica* Leaves Mouthwash
8	**APSECON/2025/HDT/EP04**	K P Sahana	Formulation And Evaluation Of Solanum Nigrum L. Leaves Lehya
9	**APSECON/2025/COL/OP03**	Yong Li Chan	Study Of In Vitro Antibacterial Efficiency Of Senna alata Leaf's Ethanolic Extract Against Selected Acne Causing Bacteria
10	**APSECON/2025/HDT/EP05**	Neha Ravindra	Standardization and Formulation of Moringa oleifera Lam. Herbal Tea
11	**APSECON/2025/HDT/OOP02**	Shah Kamal Khan Bin Jamaldin	"Golden Capra blend": Polyherbal Dark Circle Defense Paper Soap

INDIAN KNOWLEDGE SYSTEM & HEALTH EDUCATION

S.NO	ABSTRACT NUMBER	PRESENTING AUTHOR	ABSTRACT TITLE
1	**APSECON/2025/IKS/OEP01**	Sita Kumari Karanam	Ethics and Governance in Indian Philosophy: Relevance to Global Leadership

PHARMACOLOGY

S.NO	ABSTRACT NUMBER	PRESENTING AUTHOR	ABSTRACT TITLE
1	**APSECON/2025/COL/OEP01**	K. Meghana	Hepatitis and medicinal plants: An overview
2	**APSECON/2025/COL/OOP01**	Abarna P	The Potential Antifungal Agents Through Inhibition Of Lanosterol 14-A Demethylase
3	**APSECON/2025/COL/OOP02**	Rajalekshmi JR	*hIn Silico* Analysis of Phytochemicals from Shatavari (*Asparagus racemosus*), Jivanti (*Leptadenia reticulata*), and Methi (*Trigonella foenum graecum*): Potential Galactagogue Effcts through Dopamine and Estrogen Receptor Modulation
4	**APSECON/2025/COL/OP01**	Anu.S	Association of Labor Epidural Analgesia, Oxytocin Exposure, and Risk of Autism in Children
5	**APSECON/2025/COL/OP02**	Sangita Saini	Containing *Coptis Teeta* And Cow Urine
6	**APSECON/2025/COL/OP03**	M. Chadrakala	Technosphere Technology-Assisted Insulin Inhalation: An Exciting Therapy For Alleviating Diabetes
7	**APSECON/2025/COL/OP04**	Shubhashree M S	From Needles to Pills : The Future of Insulin Therapy

8	**APSECON/2025/COL/EP01**	Hamsaveni M M	Duchenne Muscular Dystrophy (DMD)
9	**APSECON/2025/COL/EP02**	Keerthana M	Comparative Study On Pantoprazole versus Ranitidine
10	**APSECON/2025/COL/EP03**	Harshith Gowda Mn	Understanding the Intersection of ADHD and Dyslexia: Challenges and Strategies for Support
11	**APSECON/2025/COL/EP04**	Avani KV	BorderlinePersonality Disorder
12	**APSECON/2025/COL/EP05**	Lavanya A	Rezafungin: A Novel Echinocandin Bridging gaps in Antifungal therapy
13	**APSECON/2025/COL/EP06**	Prithvi Kumar K	Headache-Free Horizons: Cutting-Edge Migraine Solutions
14	**APSECON/2025/COL/EP07**	Gangadhar Muthy P	Advancements in Angina Pectoris Treatment: Emerging Therapies and On-going Research
15	**APSECON/2025/COL/OP05**	Neha Mali	Metabolite profiling and Spectral Analysis of extract using GC-MS study on alcohol induced liver steatosis and cirrhosis in Swiss mice
16	**APSECON/2025/COL/OP06**	Syeda Zohra Batool	CRISPR-Cas9: Revolutionizing Genetic Modifications
17	**APSECON/2025/COL/OP07**	Mamatha G	Exploring Soluble Epoxide Hydrolase Inhibitors For Alzheimer's Disease: A Preclinical Evaluation Of Nigella sativa
18	**APSECON/2025/COL/EP08**	Shivamuttu	Ibrexafungerp: A Novel Oral Triterpenoid Antifungal Drug
19	**APSECON/2025/COL/EP09**	Madhushalini B	Covid-19 In Dialysis: Clinical Impact, Immune Response, Prevention, And Treatment

20	**APSECON/2025/COL/OEP02**	Iffat fatma siddiqui	Protective effect of Phaseolus vulgaris seed against cisplatin-induced nephrotoxicity
21	**APSECON/2025/COL/OEP02**	Kushaal A	Teratogenic Effect of Drugs at Different Stages of Pregnancy

CHEMISTRY, BOTANY & ZOOLOGY

S.NO	ABSTRACT NUMBER	PRESENTING AUTHOR	ABSTRACT TITLE
1	**APSECON/2025/CBZ/EP01**	Gagana Aradhya	"A Novel Analytical Method Development And Validation By Using Zero Order Uv-Spectrophotometric Method".
2	**APSECON/2025/CBZ/OOP01**	Akshata Menasinakai	Development And Validation Of Chromatographic Method For The Simultaneous Estimation Of *Curcumin* And *Chrysin* In Dosage Form
3	**APSECON/2025/CBZ/OOP02**	Fathima Sahla K	Identification Of Mao-B Selective Inhibitors: Virtual Screening And Admet Evaluation Of Methylene Dioxy Cinnamic Acid Hydrazone Derivatives
4	**APSECON/2025/CBZ/EP02**	Rahul R	Target Identification for Hypertension And Renal Failure via Bioinformatic Pipelines
5	**APSECON/2025/CBZ/EP03**	Likhith Heggade Hb	Stability Indicating HPLC Method for Quantification of Ticarcillin And Clavulanic Acid In Pharmaceutical Dosage Form
6	**APSECON/2025/CBZ/OOP03**	Sushmita Hiremath	Validation of analytical method for Curcumin and Metformin simultaneous analysis in bulk and pharmaceutical formulation to ensure accuracy and precision
7	**APSECON/2025/CBZ/OOP04**	Pooja Koganole	Synthesis and In-Vitro Alpha Amylase Inhibitory Activity of Benzimidazole Analogues

AYUSH & INDUSTRIAL PHARMACY

S.NO	ABSTRACT NUMBER	PRESENTING AUTHOR	ABSTRACT TITLE
1	**APSECON/2025/AYIP/OOP01**	Abdullah Abubacker Siddique	Are All Medicinal Plants Safe? An *In Silico* Analysis
2	**APSECON/2025/AYIP/OOP02**	Nagendra R	Effect of permeation enhancers on unidirectional buccal patches of sumatriptan succinate for buccal drug delivery
3	**APSECON/2025/AYIP/OOP03**	Salman M	Stability and efficacy of probiotic gummies: A comprehensive study
4	**APSECON/2025/AYIP/OOP04**	Satyanarayana Thota	Effect of different herbal tranquilizers on Anxiety, Insomnia and mental illness

PHARMACOVIGILANCE & PHARMACOECONOMICS

S.NO	ABSTRACT NUMBER	PRESENTING AUTHOR	ABSTRACT TITLE
1	**APSECON/2025/PP/EP01**	Bindu MA	Bioinformatics And Disproportionality Analysis Of Novel Signals Of Atorvastatin Using Us Food And Drug Administration Adverse Event Reporting System (Faers) Database
2	**APSECON/2025/PP/EP02**	Yashwanth G R	"FAERS-Based Disproportionality Analysis And Docking Studies Reveal A Potential Signal For Nusinersen"
3	**APSECON/2025/PP/EP03**	Ranjini SA	Study On Prevalence Of Gestational Diabetes Mellitus Among Pregnant Woman In India And Associated Risk Factors.
4	**APSECON/2025/PP/OP01**	Premalatha Adiker	Chronic Cough Potentially Induced By Levetiracetam: A Novel Case Report
5	**APSECON/2025/PP/EP04**	Fathima khadri	Awareness on Adverse Drug Reactions

PHARMACY PRATICE, PATIENT CARE & HOSPITAL PHARMACY

S.NO	ABSTRACT NUMBER	PRESENTING AUTHOR	ABSTRACT TITLE
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SOCIETAL TRANSFORMATION

APSECON/2025/ST/OP01

Wearable and portable GPS solutions in dementia management, perceptions and challenges - A study on attitudes of family and professional care-givers

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Abstract

Dementia ranks as the most prevalent neurodegenerative condition worldwide. Its progression is characterized by deteriorating cognitive abilities alongside altered mobility. On the other hand, increased sedentary lifestyles and episodes of wandering and disorientation are frequently observed. Global Positioning System (GPS) technologies are progressively utilized by caregivers not only to locate individuals with dementia (PwD) who may wander but also to provide a non-invasive way of tracking their mobility patterns.

Methods: Participants were informed about the various conditions linked with dementia, particularly wandering tendencies. A structured survey was conducted across old age homes and senior citizen clubs to gauge awareness among the elderly regarding wearable or portable GPS tools for tracking mobility in individuals diagnosed with common dementia or mild cognitive impairment (MCI). Data was gathered through a prepared questionnaire. Approximately 250 senior citizens participated in this study. Awareness about devices such as AngelSense, GPS Smart Sole, iTraq, Medic Alert Safely Home, Mindme, PocketFinder, Project Lifesaver, Revolutionary Tracker, and Trax were assessed.

Results: Elderly participants demonstrated good awareness of GPS devices due to their familiarity with smartphones; however, their understanding of using such devices specifically for dementia patients was limited. Additionally, while they recognized the concept of GPS tracking and mobility devices, their knowledge about specific products and their affordability was minimal. Many participants perceived the cost as prohibitive and were unaware of affordable yet effective alternatives. Raising awareness among the elderly regarding the diverse range of GPS mobility tracking tools and their practical benefits is crucial for effectively addressing challenges related to dementia care.

Key Words: Dementia, GPS, PwD, Tracking device

VALUE EDUCATION

APSECON/2025/VE/EP01

A prospective study on generic medication

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Abstract

Introduction: Generic product as "a pharmaceutical product, usually intended to be interchangeable with an innovator product, that is manufactured without a license from the innovator company.

Objective: Individual knowledge and perception towards generic drugs, to assess willingness in usage of generic medications among the individuals, evaluate the relation between their knowledge and their socio-demographic variables.

Need for study: The quality, safety and effectiveness of generic medications are equivalent to those of original brand medications. Many nations support generic medications as a way to control pharmaceutical costs and maintain the health care system as to get desirable therapeutic results at a significantly lower cost. The utilization of generic medications is crucial to consider the individual's perceptions on these medications.

By integrating prospective research methodologies encourage innovation within the pharmaceutical industry. This approach ensures that patients have access to safe and effective treatment options at lower costs while enhancing the development of new therapies.

Conclusion: Uunderstandings of public perception, education, identification of barriers, healthcare access improvement and health policy implications.

Key words: Generic, brand, prospective, safety, efficacy

TRADITIONAL KNOWLEDGE

APSECON/2025/TK/OP01

"The legacy of healing: Empowering neurodegenerative disorders treatment through ancient traditional medicine"

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Abstract

Background: Many Neurodegenerative disorders, such as Alzheimer's disease, Parkinson's disease, multiple sclerosis and Huntington's disease, are characterized by progressive degeneration of the central nervous system, leading to cognitive decline, motor dysfunction, and diminished quality of life. These disorders affect millions of the population globally and currently lacking in effective curative therapy highlighting needs of innovative therapeutic approaches, to which the traditional system of medicine offers a treasury of knowledge and practices since ancient times.

Traditional medicine systems, encompassing Ayurveda, Traditional Chinese Medicine (TCM), Siddha, and Unani, showcase historical evidence in managing symptoms and potential slowing down their progression. Ancient texts document numerous formulations, including herbal remedies, dietary interventions and mind-body practices offer that provided relief for conditions resembling modern neurodegenerative diseases and neuroprotection, With many included examples such as Brahmi (*Bacopa monieri)*, ashwagandha(*Withania somnifera*),ginseng etc.

Objective: Modern research has revitalized interest in these traditional medicines, with emerging studies investigating the potential of these to combat oxidative stress, inflammation, protein misfolding, and mitochondrial dysfunction which led to neurodegeneration. Compounds such as curcumin, resveratrol, and ginsenosides have shown promising results in preclinical and clinical trials, revealing a hope of light for the treatment.

Conclusion: However, Integration of traditional medicine faces diverse challenges such as lack of standardized formulations, variability in bioactive components, limited large-scale clinical trials, and need for scientific validation hinder the widespread adoption of traditional medicine in mainstream healthcare. The future of traditional medicine holds great promise in the context of neurodegenerative disorders. By fostering innovative research methodologies there is high potential to develop effective treatments of traditional practice alongside modern scientific advancements. These approaches, combined with artificial intelligence may ultimately provide therapeutic strategies for individuals.

Keywords: Neurodegenerative disorders, traditional medicine, Ayurveda, ancient texts, neuroprotection, scientific advancements.

APSECON/2025/TK/EP01

Design and analysis of herbal hair oil

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Abstract

Hair is one of the characteristics features of mammals and has various function such as protection against external factors i.e. heat, cold, etc. Hair is one of the important parts of body considered to be protective appendages on the body and accessory structure of the integument along with sebaceous gland and sweat gland. The basic part of hair is bulb, root and shaft. Hair fall, dandruff, lice, split end, grey hair are some of the well-known problems related to hair. A piece of hair looks simply but it is one of the most complicated structures in body. The significance of herbal hair oil for the longevity of hair health is highlighted in this study. Hair care products applied to the hair to cure hair issues include herbal hair oil. A vital component of natural cosmetics is herbal hair oil. The goals of herbal hair oil are discussed in this article, along with how it may improve hair health, control frizz, prevent hair loss and more. This focuses on the components that are frequently used to make herbal hair oil, such as coconut oil, sesame oil, mustard oil and other herbal ingredients. Herbal hair oil is more in demand and utilized for several hair conditions.

Key words: Mustard oil; Sesame oil; Herbal Hair oil

APSECON/2025/TK/EP02

Anti-fungal potentials of roots of *Ixora coccinea*

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Abstract

Background: Fungal infections are the most common global issue for skin health. Fungal infections are often treated by topical or systemic anti-fungal therapy. Topical fungal therapy is usually preferred because of their targeted therapy and minimal side effects. Rich medicated oil had been used for treating athletes foot, because it contains varying degrees of anti – fungal properties that are mainly due to the presence of bio-active compounds.

Objective: This review highlights the potential of medicated oil and their compounds for application as anti- fungal agents.

Results: In our findings, medicated oil with high percentage of chemical constituents such as Triterpenes which contains Ursolic acid, oleanolic acid, lupeol and flavonoids which contains Kaempferol, quercetin. It also contains Anthocyanidins, Phenolicacid, Ferulicacid, Oleicacid, Linoleic acid, Stearic acid and Sitosterol showed excellent antifungal properties.

Conclusion: The present review is a compilation of updated information on plant essential oilswithanti-fungalproperties.

Keywords: Triterpenes, ursolic acid, oleanolicacid, lupeol, quercetin and kaempferol.

APSECON/2025/TK/EP03

In vitro antioxidant and anticancer activity of C*issus quadrangularis Linn*. on human breast carcinoma cell lines

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Abstract

Background: Breast cancer is the most common cancer diagnosed in women, accounting for more than 1 in 10 new cancer diagnoses annually, and is the second most common cause of cancer death among women worldwide. The risk factors for breast cancer are well established, and risk reduction plays a vital role in reducing the incidence of breast cancer. Breast cancer typically evolves silently, usually discovered on routine screening.

Methods: Using an in vitro assay technique, the current work sought to separate the flavonoid fraction from the aerial portions of *Cissus quadrangularis Linn*. and assess its antioxidant and anticancer properties. The drug's total phenolic and flavonoid contents were determined. Column chromatography was used to separate the flavonoid fraction, and HPLC was used for analysis. Using nitric oxide, DPPH, and hydroxyl radical scavenging assays, the antioxidant activity of the ethanol extract and extracted flavonoid fraction was examined in vitro. The MTT assay's in vitro cancer model used a breast cancer (MCF 7) cell line. Within the ethanol extract, the total phenolic and total flavonoid contents were 28.6 mg/g dry weight in gallic acid equivalents and 15.8 mg/g in quercetin equivalents, respectively.

Results: With IC50 values of 10 μg/mL, 12 μg/mL and 10 μg/mL for the flavonoid fraction and 98 μg/mL, 125 μg/mL and 96 μg/mL for the ethanol extract, the tested extract demonstrated good dose-dependent free radical scavenging properties in all models. With an IC50 value of 40 μg/mL, the flavonoid fraction exhibits strong anticancer properties against breast cancer cells (MCF7).

Conclusion: *Cissus quadrangularis* possesses potential anti-cancer and antioxidant properties. Further research work employing more models are required to substantiate the efficacy.

Key Words: *Cissus quadrangularis Linn.*, cell line, Antioxidant, Anticancer.

HERBAL DRUG TECHNOLOGY

APSECON/2025/HDT/OEP01

New trends of click chemistry in drug development & designing

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The significance of medicinal chemistry is to include molecules or study of molecules during the process of drug discovery of new molecules, modifying and designing or lead optimization etc.

The acknowledgement of these quick synthetic methodologies should approve the medicinal chemist to put on a large number of pharmacologically active molecules in a very short period of interval which facilitate the process of drug designing and lead optimization etc.

The Click chemistry involved a set of reactions that are fast, simple, regiospecific, easy to purify, versatile and give high product yields. While there are a number of reactions that fulfill the criteria, the Huisgen 1,3-dipolar Cycloaddition of Azides and terminal alkynes has emerged as the frontrunner.

Click chemistry has been proven to be very useful in designing, modifying and discovery of new molecules or lead optimization etc. Due to the availability of a large number of click reactions with various characteristics, selection of appropriate chemistry for a given application is often not a trivial task.

The concept of click chemistry (CC), first introduced by K.B. Sharpless (2001) , has been widely adopted for use in drug designing.In this it is also accounts for the outline novel aspects of CC related to drug designing with a brief overview of molecular mechanisms underlying each click reaction commonly used by researchers and the main patents that paved the way for further diverse medicinal applications.

It has huge number of applications in several fields of research, including pharmaceutical sciences, herbal drug technology, material sciences and polymer chemistry etc.

In this article, important aspects of the Click reactions are been discussed along with some of its applications in Herbal drug technology. Bio-conjugation, nanoparticle Polymer and pharmaceutical-related polymer chemistry is also been tunicate. Along with types, advantages and limitations of Click reactions are also been discussed.

It is also described the recent progress in drug discovery and polymeric and carbon material-based drug delivery for potential pharmaceutical applications and advancements based on the CC approach and discuss some intrinsic limitations of this popular conjugation reaction. The use of CC is likely to play a significant role in advance drug discovery and bio-conjugation development. Types, advantages and limitations of Click reactions are also been enclosed in this article.

Key words: - Click chemistry, Click reaction, Drug discovery, Medicinal chemistry, Modular synthesic

APSECON/2025/HDT/EP01

Current status of herbal drugs in India

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Abstract

Herbal drugs constitute a major share of all the officially recognised systems of health in India viz. Ayurveda, Yoga, Unani, Siddha, Homeopathy and Naturopathy. More than 70% of India's 1.1 billion population still use these non-allopathic systems of medicine.

Currently, there is no separate category of herbal drugs or dietary supplements, as per the Indian Drugs Act. However, there is a vast experiential-evidence base for many of the natural drugs. This offers immense opportunities for observational therapeutics and Reverse Pharmacology. Evidence-based herbals are widely used in the diverse systems and manufactured, as per the pharmacopoeial guidelines, by a well-organised industry. Significant basic and clinical research has been carried out on the medicinal plants and their formulations, with the state-of-the-art methods in a number of Institutes/Universities. There are some good examples. Indian medicinal plants also provide a rich source for antioxidants that are known to prevent/delay different diseased states. The antioxidant protection is observed at different levels. The medicinal plants also contain other beneficial compounds like ingredients for functional foods.

Conclusion: Hence, the global knowledge about Ayurveda and Indian herbals will hopefully be enhanced by information on the evidence-base of these plants. This will yield rich dividends in the coming years.

Key words: Ayurveda, Indian medicinal plants, reverse pharmacology, observational therapeutics, antioxidant

APSECON/2025/HDT/OP02

Optimization and evaluation of *Jatropha Curcas* seed extract ethosomal gel formulation for antifungal activity using central composite design

Mohammad Yosuf Malik Damani, Jagadish Kakadiya and Girish Bolakatti

Abstract

Objective: The present study is carried out for the development and optimization of *Jatropha curcas* seed extract ethosomal gel formulation by using 3^2 central composite design which executed 13 runs.

Methodology: The ethosomal formulations are optimized at three levels viz; low, medium and high considering concentration of lecithin and volume of ethanol as independent variables. Four axial, eight factorial and one center points were recognized for the optimization. The optimized formula was casted into gel and subjected for the characterization like particle size, vesicle size, morphology, topology and interaction studies. Evaluation was performed for the selected formula by examining the parameters like entrapment efficiency, drug content, pH, viscosity, spread ability, *in-vitro* drug release and release kinetics. The GC-MS and LC-MS studies of the extract were carried out to identify and quantify the biologically active antifungal phytoconstituents. The molecular docking was performed to highlight the antifungal activity of phytoconstituents. Antifungal activity was performed by Agar diffusion assay, MIC, MFC and broth dilution method against *Candida albicans.*

Result: The effect of responses on independent variables depicted significant value (>0.05) of ANNOVA. The size of ectosomes was found to be 154.1 nm with PDI 0.368 and zeta potential -29.6mV for the optimized formulation. The SEM images show the almost spherical nature of ectosomes with unilamellarity, smooth surface and porosity. The SEM image of gel shows uniform dispersion of ectosomes in Carbopol base. The vibrational analysis shows no overlap in the overlay plot, hence ectosome suspension is formed and the extract is entrapped in the lipoidal membrane. The JCE4 satisfied all the evaluation parameters with best results. The best fitting release kinetic model for JCE4 was Hixson Crowell.

Conclusion: The GC-MS and LC-MS profile of *Jatropha curcas* seed extract showed the presence of palmitic acid and it is considered as potential candidate for the antifungal activity which was confirmed by molecular docking against fluconazole.

Keywords – *Jatropha curcas*, ectosomes, vesicle size, agar diffusion and *Candida albicans*, seed extract

APSECON/2025/HDT/OP01

Development and optimization of topical nano formulations of *Adina cordifolia* bark and leaf using central composite design

Rakesh S A, G S Chakraborthy and Girish Bolakatti

Abstract

Objective: This article develops topical hydrogels containing CuO NPs synthesized from the extracts of *Adina cordifolia* bark and leaves via green synthesis methods.

Method: For critical formulation variables: polymer concentration (A), nanoparticle loading (B) and stirring time (C), a 2 face-centered central composite design (FCCCD) with 13 experimental runs, factorial, axial and five center points were used for optimization. The CuO NPs were characterized by UV-visible spectroscopy, FTIR and particle size analysis, showing peaks at 282 nm for bark-based NPs and 264 nm for leaf-based NPs.

Result: The optimized bark hydrogel yielded a cumulative drug release (%CDR) of 65%, while the leaf hydrogel exhibited a %CDR of 75%. Statistical analysis showed that the quadratic model was significant for both formulations at $p < 0.05$, with F-values of 10.69 and 7.01 respectively. Polynomial equations for %CDR identified polymer concentration and nanoparticle loading as the key factors. Response surface and contour plots enabled accurate tuning to obtain optimal formulations; experimental results were in good agreement with the predicted values.

Antimicrobial activity was assessed by means of minimum inhibitory concentration (MIC) and zone of inhibition studies against *Staphylococcus aureus*. Both bark and leaf formulations revealed significant antimicrobial efficacy, thus confirming the potential of CuO NPs to prevent microbial infections and thereby improve therapeutic outcomes.

Conclusion: This study underscores the importance of FCCCD in optimizing nano-formulations of bark and leaf hydrogels for reproducibility, scalability and proper antimicrobial activity. The advanced wound care applications and future exploration of CuO NP-based therapeutics are underpinned by these results.

Keywords - *Adina cordifolia*, Copper oxide nanoparticle, Central composite design, Topical hydrogels

APSECON/2025/HDT/OOP01

LC–MS based phytochemical profiling of ethanolic extract of leaves of *Ipomoea obscura*

Neethu Varghese, Dr. R. Mythreyi, Dr. Arun Rasheed

Abstract

Introduction: Plant-Based Drugs Have Been Utilized Globally In Traditional Medicine To Treat Various Diseases. As The Largest Producer Of Medicinal Herbs, India Plays A Significant Role In This Field. Phytochemistry, The Study Of Bioactive Compounds In Plants, Is Essential For Drug Development. The *Ipomoea Obscura* (L.) Ker Gawl, A Plant Belonging To The Family Convolvulaceae. The Extract Of The Plant Is Used For Various Ailments In Traditional System Of Medicine.

Methods: The Objective Of The Current Research Project Was Phytochemical Profiling By Preliminary Phytochemical Screening And LC–MS Analysis Of Ethanolic Extract Of *Ipomoea Obscura.* The Total Phenolic And Total Flavonoid Contents In The Plant Extracts Were Determined By The Spectrophotometric Methods.

Results And Conclusion: Preliminary Phytochemical Screening Was Done To Identify The Presence Of Various Primary And Secondary Metabolites. The Flavonoid Content Of The Ethanolic Extract Was Found To Be 71 QE Mg/Gm And The Phenolic Content Of The Extract Was Found To Be 52 GAE Mg/Gm. LC-MS Was Utilized To Identify Compounds In The Extract. The Analysis Showed That The Ethanolic Leaves Extract Of *Ipomoea Obscura* Contains Many Important Compounds Such As P-Coumaric Acid, Quinic Acid, Procyanidin, Xylopine, B-Sitosterol, Stephabyssine, 1,4-Eicosadiene Etc.

Keywords: *Ipomoea Obscura,* Phytochemical, LC-MS, Flavonoid Content

APSECON/2025/HDT/EP02

Formulation and evaluation of *Murraya koenigii* and *Moringa oleifera* leaves (L) gutika

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Abstract

The aim of this study was to evaluate and formulate the gutika (herbal pill) using *Murraya koenigii* and *Moringa oleifera* leaves recognised for their bioactive compounds, nutritional benefits and potential applications in food and medicine. Both plants are rich in phytochemicals, exhibiting significant antimicrobial, Antioxidant, and anti-inflammatory properties. Moringa oleifera leaves are known for their high nutritional value, containing essential vitamins such as A and C, proteins, carbohydrates and minerals. *Murraya koenigii* leaves are similarly valued for their culinary uses and health benefits. Various physicochemical and phytochemical evaluations are done to identify the various phytoconstituents present in them. The formulation of products using these leaves could enhance their health benefits. The study involves the preparation of gutika using a standard ayurvedic formulation technique. The powdered leaves were combined with suitable excipients to form a dough mass. The prepared gutika were evaluated for various physicochemical parameters like ash value, LOD, hardness and dissolution time test. The formulated gutika met the desired physicochemical standards, indicating their suitability for administration. Further studies are required to evaluate their pharmacological activity and efficacy.

Keywords: *Murraya koenigii*, *Muringa oleifera*, gutica.

APSECON/2025/HDT/EP03

Formulation and evaluation of *Tamarindus indica* leaves mouthwash

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Abstract

The aim of this study was to formulate and evaluate an herbal mouthwash using Tamarindus indica leaves extract, recognized for its antimicrobial, anti-inflammatory, and antioxidant properties. The leaves of *Tamarindus indica* were collected, dried, and extracted. The formulation was prepared by incorporating the extract into a suitable mouthwash base, containing flavoring agents, sweeteners. The prepared mouthwash was evaluated for its physicochemical properties, and stability, and subjected to antimicrobial activity tests against oral pathogens such as Staphylococcus aureus and Salmonella typhi. This study highlights the potential of *Tamarindus indica* as a natural, safe, and effective ingredient in oral care formulations. Further *in vivo* studies are recommended to confirm its long-term efficacy and safety in maintaining oral hygiene.

Keywords: *Tamarindus indica*, phytochemical studies, antimicrobial activity, mouthwash.

APSECON/2025/HDT/EP04

Formulation and evaluation of *Solanum nigrum l.* leaves lehya

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Abstract

The black nightshade, scientifically known as *Solanum nigrum* is an important plant in traditional medicine, belonging to the family of *Solanaceae*. It is used as an indigenous leafy vegetable in Kenya among many communities. *Solanum nigrum* is used in cough, heart disease, fever, ulcer, asthma and eye trouble treatment. Several chemical tests have been conducted to identify the plant's phytoconstituents.

By using *Solanum nigrum* leaves, we have prepared lehya by using decoction of these leaves. Consistency of *Solanum nigrum* Lehya is in the form of semisolid, depending on the ratio of ingredients. This study would serve as source of valuable information for evaluation and development formulation.

Keywords: *Solanum nigrum L ,* Lehya, Formulation, Standardization.

APSECON/2025/HDT/EP05

Standardization and formulation of *Moringa oleifera lam.* herbal tea

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Abstract

Moringa oleifera Lam. is commonly called drumstick or horseradish which belongs to the family Moringaccae. lt is widely used as a medicinal plant in Ayurveda. The primary objective of this study is to assess the macroscopic characteristics, microscopic features, physicochemical and phytochemical screening. The microscopic evaluation showed useful characteristics for the recognition of the leaf of *Moringa oleifera Lam*.

Transverse section showed the presence of single layer of wavy epidermal cells with striated cuticle single layer palisade beneath upper epidermis in lamina region, collenchyma below the upper epidermis and above the lower epidermis in midrib region, xylem and phloem in center, sclerenchyma in between vascular bundle and collenchyma in mid rib region. The physio-chemical studies revealed values for total

Ash, acid-insoluble ash, alcohol-soluble extractive, water-soluble extractive, water-soluble ash, and pH. Phytochemical analysis revealed the presence of sugar, lipid,glycoside, saponins, phenols, flavonoids, tannins and steroids. This study describes the macroscopic, microscopic characters, phytochemical and physicochemical screening of *Moringa oleifera Lam*. leaves.

Key Words: *Moringa oleifera Lam.*, Moringaceae, Drumstick, Xylem, Phloem, Sclerenchyma, Lipid, Glycoside, Flavonoids, Tannins Herbal Tea.

APSECON/2025/HDT/OOP02

Study on recurrence rate of treatment models for oral cancer management

Shah Kamal Khan Bin Jamaldin, Mahibub Mahamadsa Kanakal, Quest International University Ipoh Malaysia
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Abstract

Oral cancer refers to tumors developed in the lips, hard palate, upper and lower alveolar ridges, anterior two-thirds of the tongue, sublingual area, buccal mucosa, retromolar trigons and floor of the mouth. The objective of the study is to compare and analyze surgical and combination treatment models for oral cancer management and their recurrence rate. In this study we have selected a total of 13,880 cases which includes different treatment model for each type of oral cancer at Pulau Pinang. Inclusion Criteria includes Only stage 3 and 4, recurrence within 5 years, age of 45 to 75 years is included and cases treated with Surgery, Radiotherapy, Chemo, Herbal Product or Combination treatments Exclusion Criteria were stage 1 and Stage 2 patients, recurrence after 5 years cases, Cases with other multiple complications are excluded. Tongue cancer, which is squamous cell carcinoma and shows the highest recurrence compared to other cancers. Mode of effective treatment is surgery and combinational treatment, predominantly radiotherapy. Neck cancer has shown second highest recurrence and again similar treatment to tongue cancer is effective as compared to other treatment models. Significant reduction is recurrence rate was observed with radiotherapy in combination with surgery. Highest recurrence noticed in treatment model without surgery. Among various treatment model surgery along with radiotherapy was found most effective and lowest recurrence observed. Whereas chemotherapy is not a choice of treatment as recurrence is higher even in combination with radiotherapy as compared to combination with surgery. Due to the high spreading rate as multi lymph nodes and recurrence was seen highest in Tongue and Neck cancer among all oral cancers and it requires multiple treatment combination model for lower recurrence.

Keywords: Oral Cancer, Treatment Model, Recurrence Rate.

APSECON/2025/HDT/EP06

"Golden Capra blend": Polyherbal dark circle defense paper soap

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Abstract

Background: Pre-orbital hyperpigmentation (POH) is a prevalent dermatological condition characterized by darkened skin around the eyes, influenced by various genetic, environmental and lifestyle factors. The study introduces "Golden Capra blend," a novel polyherbal paper soap formulated with *Cassia fistula*, *Capra hircus* (goat) milk and Linnaea, specifically targeting POH. *Cassia fistula* is recognized for its antioxidant and skin-lightening properties, while goat milk offers gentle exfoliation and hydration due to its lactic acid content. Linnaea is included for its anti-inflammatory and brightening effects.

Objectives: The primary objective of this study is to develop and evaluate the "Golden Capra blend" as a natural alternative for managing pre-orbital hyperpigmentation. The formulation aims to combine the unique characteristics of paper soap—such as portability, ease of use, antibacterial properties and eco-friendliness—with the benefits of a polyherbal composition. The preparation process involves boiling *Cassia fistula* pods, soaking Linnaea and blending these with melted glycerin soap and goat milk, which is then applied to absorbent rice paper.

Conclusion: Preliminary evaluations of the "Golden Capra blend" suggest that it not only brightens the skin but also hydrates and improves texture, making it suitable for the sensitive periorbital area. This product merges traditional herbal remedies with modern skincare, offering a practical solution that aligns with contemporary lifestyles while promoting skin health. As hygiene and sanitation concerns grow, the formulation presents a viable option for consumers. Future research will focus on the long-term efficacy and safety of this formulation, emphasizing the potential of medicinal plants in cosmetic development.

Keywords: Pre-orbital hyperpigmentation, polyherbal paper soap, *Cassia fistula*, *Capra hircus* milk, Linnaea, skincare.

INDIAN KNOWLEDGE SYSTEM & HEALTH EDUCATION

APSECON/2025/IKS/OEP01

Ethics and Governance in Indian Philosophy: Relevance to Global Leadership

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Abstract

Indian philosophy, with its timeless principles of ethics and governance, offers profound insights for addressing contemporary global leadership challenges. Rooted in texts like the Bhagavad Gita and Artha shastra, concepts such as Dharma (righteousness), Ahimsa (non-violence), and Nishkama Karma (selfless action) emphasize ethical decision-making, social harmony, and sustainable governance. This paper explores their application in fostering inclusive leadership, resolving conflicts and promoting sustainability in a globalized world. By integrating these values, modern leaders can cultivate trust, resilience, and a shared vision for equitable progress, demonstrating the enduring relevance of Indian Knowledge Systems in shaping transformative global leadership.

Keywords: Indian Philosophy, Ethics in Leadership, Governance Principles, Global Leadership, Sustainability and Dharma

PHARMACOLOGY

APSECON/2025/COL/OEP01

Hepatitis and medicinal plants: An overview

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Abstract

The Liver is a vital organ of paramount importance involved in the maintenance of metabolic functions and detoxification of the exogenous and endogenous challenges like xenobiotic, drugs, viral infections and chronic alcoholism. Liver diseases are a major worldwide health problem, with high endemicity in developing countries. They are mainly caused by chemicals and some drugs when taken in very high doses. Despite advances in modern medicine, there is no effective drug available that stimulates liver function, offer protection to the live r from damage or help to regenerate hepatic cells. There is urgent need, therefore, for effective drugs to replace supplement those in current use. The plant kingdom is undoubtedly valuable as a source of new medicinal agents. Herbal remedies are focused in the pharmaceutical industry to evolve a safe route for liver disorders. There is no plant in this Universe which is non-medicinal and which cannot be made of use for many purposes and by many modes. This definition rightly suggests that in principle all plants have a potential medicinal value. Medicinal plants have been considered as important therapeutic aid for alleviating ailment of humankind. Search for eternal health and longevity and to seek remedy to relieve pain and discomfort prompted the early man to explore his immediate natural surroundings to develop a variety of therapeutic agents using natural resources. Liver cell injury caused by various toxic chemicals (certain anti-biotic, chemotherapeutic agents, carbon tetrachloride (CCL4), thioacetamide (TAA) etc., excessive alcohol consumption and microbes is well studied. Herbal medicines have been used in the treatment of liver diseases for a long time. A number of herbal preparations are available in the market. The focus of this review is to elucidate the importance of liver and aimed at compiling data based on reported works on medicinal plants that have been tested in hepato-toxicity models and proved as hepatoprotective.

Keywords: Hepatitis, medicinal plants, pharmaceutical industry

APSECON/2025/COL/OOP01

The Potential Antifungal Agents Through Inhibition of Lanosterol 14-A Demethylase

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Abstract

Objective: Cutaneous antifungal infections affect more than a quarter of the world's population. The rampant use of antifungal therapy in immunocompromised individuals has marked the onset of antifungal drug resistance. Considering the emerging antifungal resistance, economic facets associated with fungal infections and the limited number of antifungal drugs available, the search for alternative low-cost and low-toxicity traditional therapies and natural products is encouraged. The azole antifungal agents in clinical use contain either azole/imidazole groups, which prevent ergosterol synthesis by inhibiting the lanosterol 14-α demethylase enzyme. *Lepidium sativum* is a medicinal plant that possesses alkaloids with imidazole groups called lepidines. Consequently, the present study was carried out to conduct an *in-silico* analysis of binding affinity of the phytochemicals lepidine B, C, D, E and F present in *Lepidium sativum* plant compared with clinically used imidazole antifungal agents such as Ketoconazole, Econazole, Sertaconazole, Clotrimazole and Miconazole on their binding affinity to Lanosterol 14α-demethylase enzyme. The docking of L**anosterol 14-alpha demethylase** (PDB ID:5TZ1) with clinical antifungals or lepidine compounds was performed using the Swiss Dock online tool with the Auto Dock Vina option. Lepidine D exhibited the highest binding affinity (Gibbs free energy, ΔG) of -10.293 to the lanosterol 14-α demethylase when compared with Econazole, Sertaconazole, Miconazole & Clotrimazole (ΔG= -9.873, -9.926, -7.174 & -9.476respectively). Other lepidine phytochemicals E, C, B & F exhibited the binding affinity (Gibbs free energy, ΔG) of-9.833, -9.748, -9.616 & -9.541 respectively which is higher than Miconazole and Clotrimazole. All imidazole antifungal agents contain halogen atoms (Chlorine or Fluorine) in their benzene rings.

Result: Hence, using Chemsketch, two halogen atoms were added to the natural lepidine phytochemical benzene ring, and the modified structures were docked with lanosterol 14-α demethylase. We found that the addition of a halogen atom to the lepidine phytochemicals increased their binding affinity more than that of their parent phytochemicals. Further In *silico* toxicological analysis of these phytochemicals using VEGA-QSAR revealed that ketoconazole (toxicity score: 11) exhibited higher toxicity scores than the lepidines B (9), C (6), D (8), E (8), and F (6). This study suggests that the phytochemical lepidine could be isolated or synthesized and further optimized for use as an antifungal agent in the future.

Keywords: Insilco analysis, lepidine, binding affinity

APSECON/2025/COL/OOP02

In Silico Analysis of Phytochemicals from Shatavari (*Asparagus racemosus*), Jivanti (*Leptadenia reticulata*), and Methi (*Trigonella foenum graecum*): Potential Galactagogue Effcts through Dopamine and Estrogen Receptor Modulation

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Abstract

Objective: Galactogogues facilitate increased milk production. The significance of providing milk to neonates, both animal and human, and the economic importance of enhanced milk production in dairy animals have led to the identification of alternative methods to mitigate the adverse effects associated with pharmaceutical interventions used for the same purpose.

Methodology: Certain herbs, such as Shatavari, Jivanti, and Methi, have demonstrated efficacy in increasing milk production in dairy animals; however, the precise mechanism of action underlying their lactogenic effect remains unclear. It is well established that dopamine- and oestrogen receptor-mediated effects play crucial roles in prolactin secretion and milk production. Consequently, the present study was undertaken to conduct an *Insilco* analysis of the phytochemicals present in Shatavari, Jivanti, and Methi on these two receptors, which are located in the Central Nervous System. The phytochemicals obtained from these plants were screened for their blood-brain barrier (BBB) permeability, and those compounds that traversed the BBB were considered for the docking of the D2 receptor (PDB ID:7JVR) and E2 receptor (PDB ID:1GWR) using the Swiss Dock online tool with Auto dock Vina Option. Diosgenin of Shatavari, Reticuline of Jivanti and Yuccagenin of Methi exhibited the highest binding affinities (Gibbs free energy, ΔG) of -11.4, -7.5 and -11.8 respectively to the D2 receptor when compared with the potent D2 antagonist Domperidone. Similarly, it was observed that 12-Hydroxyabietic acid of Shatavari, and Reticuline of Jivati demonstrated ΔG values of -9.5 and -7.8, respectively, for the estragon receptors. Further in silico toxicological analysis of these phytochemicals using VEGA-QSAR revealed that Domperidone and 17-βoestradiol exhibited higher toxicity scores than the phytochemicals. The mean toxicity score of the phytochemicals was 6.227, as compared to the toxicity scores of domperidone (8.0) and 17-βoestradiol (10.0).

Conclusion: This study elucidated that certain phytochemicals bind to the receptors involved in milk production and exhibit lower toxicity than conventional drugs. Further *in silico*dynamic studies and *in vitro* studies are necessary to elucidate the mechanisms of action of these phytochemicals.

Key words: Galactogogues, Diosgenin.

APSECON/2025/COL/OP01

Association of labor epidural analgesia, oxytocin exposure, and risk of autism in children

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Abstract

Objective: Autism spectrum disorder is a neurological and developmental disorder that affects the way people interact with others, communicate, learn, and behave.

Epidural analgesics are common and highly effective form of pain relief used during labor and delivery. By delivering medication directly into the epidural space surrounding the spinal cord, these analgesics provide pain relief.

Oxytocin is a naturally occurring hormone produced by the hypothalamus. Synthetic oxytocin like Pitocin is used medically to induce labor.It is essential for initiating and maintaining uterine contractions during labor. ASD risk was not associated with use of oxytocin alone, but an increased risk was noted if both LEA and oxytocin were administered.

Method: The investigations reported that maternal LEA for vaginal delivery was associated with increased risk of ASD in children. These findings raised concerns regarding the long-term safety of LEA and called for further research in this area, although ASD is rare and its risk factors remain elusive and multifactorial.

Among these multiple exposures, oxytocin use is common. Labor epidural analgesia can interfere with uterine contractility, prolonging labor and decreasing the rate of spontaneous births. Previous studies have shown that oxytocin use for labor induction and augmentation may be associated with risk of ASD in children.

ASD may be induced due to Maternal-Fetal Hormonal Interference, prolonged labor time, impaired fetal Oxygenation and other birth complications. Maternal LEA exposure for vaginal delivery was associated with increased ASD risk in offspring. This risk was further increased if oxytocin was also administered. Oxytocin exposure without LEA exposure was not associated with ASD risk in offspring.

Key words: LEA(Labour Epidural Analgesia), ASD(Autistic Spectrum Disorders), Oxytocin.

APSECON/2025/COL/OP02

Hypoglycemic, neuroprotective and antioxidant activity of the herbal formulation containing Coptis teeta and cow urine

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Abstract

Background: *Coptis teeta* is a widely recognized herb among various tribes in India, utilized for the treatment of ailments associated with the stomach, eye, skin and kidneys.

Objective: The roots of this plant are yellowish brown hue, accompanied by strong odor and bitter taste. The ethanolic extract of *Coptis teeta* has been shown to enhance the glucose uptake. This study aims to develop a polyherbal formulation and assess its efficacy in managing diabetes and its related complications.

Method: The formulation was prepared using ethanolic extract of the rhizome of *Coptis teeta* plant in combination with the cow urine. The distillate of cow urine is to augment the effectiveness and potency of herbal drugs.

Result: In this formulation, the ratio of ethanolic extract of *Coptis teeta* to cow urine is 1:10. The study observed the α-amylase inhibitory activity of extract with an IC_{50} value 145.42 µg/ml and α-glucosidase inhibitory activity at IC_{50} value 152.2 µg/ml. The antioxidant activity of extract was evaluated using DPPH, revealing a free radical scavenging activity with IC_{50} value 112.41. Additionally, the formulation was also assessed for the cytoprotective potential in the in SHSY5Y cell line through neutral red uptake assays, yielding IC_{50} value 57.71 µg/ml.

Conclusion: The experimental data suggested that the formulation can be looked upon as promising candidate possessing anti-diabetic, antioxidant and neuroprotective properties.

Key words: α-amylase inhibitory, cytoprotective

APSECON/2025/COL/OP03

Technosphere technology-assisted insulin inhalation: An exciting therapy for alleviating diabetes

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Abstract

Background: The increasing global prevalence of diabetes necessitates innovative treatment approaches. Technosphere technology-assisted insulin inhalation offers a promising alternative to traditional injection methods by leveraging the pulmonary system for effective insulin delivery. This novel therapy aims to improve glycemic control while minimizing the risks associated with conventional insulin administration, thereby enhancing patient outcomes. The advent of Technosphere technology has led to significant advancements in diabetes management. By utilizing inhaled insulin, this method provides a noninvasive alternative to injections, potentially improving patient adherence and comfort. Owing to its rapid action and favorable pharmacokinetics, Technosphere insulin represents a transformative approach for achieving better glycemic control.

Objectives: The primary objective of this study was to explore the potential of Technosphere technology-assisted insulin inhalation as a viable alternative to the traditional insulin delivery methods. Specifically, this study aimed to Evaluation of the pharmacokinetic profile of Technosphere insulin compared to traditional insulin formulations Assessment of the efficacy of inhaled insulin in achieving glycemic control in patients with diabetes Investigate the safety and tolerability of Technosphere insulin in clinical settings Analyze patient adherence and satisfaction with inhaled insulin therapy compared to injection-based methods.

Results: Clinical trials have demonstrated that Technosphere insulin, specifically Afrezza, offers a rapid onset of action and a favorable pharmacokinetic profile, distinguishing it from previously inhaled insulin products such as Exubera. Studies indicate that Technosphere insulin effectively improves glycemic control without the common side effects associated with other prandial insulin therapies, such as weight gain and hypoglycemia. The safety profile of Technosphere insulin has been commendable, with tolerability reported to be high among participants in clinical studies.

Conclusion: Technosphere technology-assisted insulin inhalation represents a promising advancement in diabetes management that addresses some of the limitations associated with traditional insulin delivery methods. The rapid action, improved pharmacokinetics, and favorable safety profile of Afrezza suggest that inhaled insulin can enhance patient adherence and overall treatment satisfaction. As the prevalence of diabetes continues to rise, innovative therapies, such as Technosphere insulin, are essential for improving patient outcomes and quality of life. Further research and long-term studies are warranted to fully establish the benefits and potential of inhaled insulin in a diverse patient population.

Keywords: Technosphere: Mechanism, Pharmacokinetics, Indication, Contraindication, Adverse chemical reaction.

APSECON/2025/COL/OP04

From Needles to Pills: The Future of Insulin Therapy

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Abstract

Background: Diabetes mellitus is a prevalent metabolic disorder characterized by chronic hyperglycemia due to insufficient insulin production or insulin resistance. Traditional management primarily relies on subcutaneous insulin injections, which can be burdensome for patients. The quest for oral insulin began in 1921, facing challenges in absorption. Significant advancements were made in 1990s, while first product entered clinical trials in 2006

Objectives: This review aims to explore the development and potential of oral insulin formulations as a non-invasive alternative to enhance patient compliance and improve overall diabetes management.

Methodology: The review examines various oral insulin formulations, focusing on their design to mimic the physiological release of insulin from pancreatic beta cells. Notable formulations, such as ORMD-0801 developed by Oramed Pharmaceuticals, are highlighted for their efficacy in lowering blood glucose levels during clinical trials. The role of advanced drug delivery systems in enhancing insulin absorption is also discussed.

Results: Clinical studies indicate that oral insulin formulations can effectively reduce blood glucose levels, demonstrating promise in diabetes management. Regulatory assessments by agencies like the European Medicines Evaluation Agency (EMEA) and the Food and Drug Administration (FDA) are crucial for ensuring the safety and efficacy of these new therapies.

Conclusion: Oral insulin formulations present significant advantages, including improved patient adherence and reduced anxiety related to injections. However, challenges such as gastrointestinal side effects and the risk of hypoglycemia remain. Continued research is essential to address these issues and establish oral insulin as a viable and convenient management option for diabetes patients in the future.

Key words: Oral insulin, Diabetes mellitus, Patient adherence, ORMD-0801, Non-invasive

APSECON/2025/COL/EP01

Duchenne muscular dystrophy (DMD)

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Abstract

Duchenne Muscular Dystrophy (DMD) is a rare, progressive genetic disorder primarily affecting boys, causing muscle weakness and degeneration. The disease is caused by mutations in the dystrophin gene, which is responsible for producing dystrophin, a protein essential for maintaining muscle fiber integrity. Without dystrophin, muscle cells become more vulnerable to damage and are unable to regenerate, leading to progressive muscle loss.

The life expectancy of individuals with DMD has improved with advances in medical care, especially in respiratory and cardiac management. Most affected individuals live into their 20s or 30s, though some may survive longer with appropriate interventions. As DMD progresses, muscle weakness extends to the upper body and affected individuals may require a wheelchair by their teenage years. Other complications can include cardiomyopathy, spinal scoliosis, and learning difficulties.

Diagnosis for DMD involves genetic testing, muscle biopsy, blood tests, and electromyography (EMG). Treatments aim to manage symptoms and improve quality of life, including corticosteroids to slow muscle degeneration and improve muscle strength, physical therapy to maintain joint flexibility, heart and respiratory treatments, and gene therapies and exon skipping treatments being explored in clinical trials.

KEY WORDS: Duchenne muscular dystrophy, genetic disorder, muscle loss, dystrophin

APSECON/2025/COL/EP02

Comparative study on pantoprazole versus ranitidine

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Abstract

Pantoprazole and Ranitidine are two common medications used to treat gastrointestinal disorders. A proton pump inhibitor (PPI) that reduces gastric acid production, primarily used for treating gastroesophageal reflux disease (GERD), peptic ulcers, and Zollinger-Ellison syndrome. It provides more effective relief for frequent or severe heartburn, achieving a deeper and longer-lasting reduction in stomach acid.

Ranitidine, a H2 receptor antagonist, works by blocking histamine receptors in the stomach lining, decreasing acid secretion. It is effective for mild to moderate heartburn and provides quicker relief but for a shorter duration. Pantoprazole has a longer duration of action, often providing 24-hour acid suppression with just one dose per day.

It can cause side effects such as headache, diarrhea, nausea, and long-term risks of vitamin B12 deficiency, bone fractures and kidney disease. Ranitidine is generally well tolerated but can cause mild side effects such as headache, dizziness and gastrointestinal discomfort. It has been recalled in some markets due to the detection of potentially carcinogenic impurities.

Pantoprazole demonstrated superior efficacy in relieving symptoms of GERD with 80% of patients reporting relief after 4 weeks of treatment. Ranitidine is generally less effective than PPIs for treating gastric acid-related disorders.

Keywords: Pantoprazole, Rranitidine, GERD, PPI's, H2 receptor antagonists, Side effects.

APSECON/2025/COL/EP03

Understanding the intersection of ADHD and dyslexia: Challenges and strategies for support

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Abstract

Background: Attention-Deficit/Hyperactivity Disorder (ADHD) and dyslexia remain as two widespread neurodevelopmental disorders significantly affecting learning and daily functioning.

Objective: The current research work is about examining the intricate relationship between ADHD and dyslexia, focusing on overlapping diagnostic characteristics, comorbidities and unique challenges faced by individuals who have both conditions. It has been demonstrated that approximately 30% of individuals diagnosed with dyslexia also show signs of ADHD, thus compounding attention and executive functioning, literacy skill problems.

It is with this that we shall review current research and literature on behavioral, cognitive and educational deficits due to the specific disorders, emphasizing the importance of early identification and intervention. Moreover, the forthcoming presentation is meant to proper evidence-based solutions that will reach and impact positively on educators, as well as caregivers in encouraging, motivating, training and supporting. Those with ADHD and dyslexia wound together with adapted instructional strategies, intensive remedial programs, and also incorporating the most modern communication technology into the learning environment.

Result: It is going to establish the knowledge and dynamics of relationship of the disorders amongst fellow inhabitants of the globe keeping in view the territories of health promotion within their context of treating initiatives to fight ADHD and dyslexia. To ignite interest and create platforms for all-time sharing, a call for united voice is put forward.

Conclusion: This is for educators, clinicians and supportive families who are up to effective synergy efforts to delineate solid support frameworks for these people with special needs in line with our vertices.

Keywords: ADHD, dyslexia, comorbidity, intervention strategies, educational support, neurodevelopmental disorders.

APSECON/2025/COL/EP04

Borderline personality disorder

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Abstract

Borderline Personality Disorder is a complex psychiatric disorder characterized by emotional dysregulation, unstable relationships and identity disturbances. It usually starts during early adulthood and significantly affects the daily functioning of the individual due to its pervasive symptoms. Common symptoms include emotional instability, identity confusion, susceptibility to addiction, self-harm behaviors, feelings of emptiness and intense anger outbursts. Diagnosis is based on criteria from the DSM-5 and involves a comprehensive assessment by a specialist.

The treatment of BPD is multimodel and focused on the specific needs of an individual. Psychotherapy, mainly Dialectical Behavior Therapy (DBT) and Cognitive Behavioral Therapy (CBT), is fundamental in symptom management. DBT focuses on emotional regulation and crisis management, while CBT targets negative thought patterns and emotional responses. Psychoanalytic and psychodynamic therapies also focus on the deep exploration of unconscious processes and past experiences.

Medication, including antidepressants, antipsychotics, mood stabilizers and anxiolytics, is used to address specific symptoms but is not a standalone treatment. The involvement of specialists is crucial due to the complexity and long-term nature of BPD, ensuring appropriate support and guidance for both patients and their families.

In conclusion, management of borderline personality disorder has to be highly multidisciplinary and all encompassing. Improving the quality of life of those suffering from BPD can only be done by psychotherapy, medication, and continuous involvement with specialists.

Keywords: BPD, Emotional instability, Impulsive behavior, Interpersonal relationships, Fear of abandonment, Self-image, DBT, Psychotherapy, Mental health, Childhood trauma

APSECON/2025/COL/EP05

Rezafungin: A novel echinocandin bridging gaps in antifungal therapy

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Abstract

The increasing invasive fungal infections, mostly occurring in immunocompromised patients and associated with high morbidity/mortality rates, have posed as a highly emerging global health threat. In addition, certain fungi species, such as Aspergillus spp. and Candida spp., that are resistant to the majority of the antifungal drugs, have been declared as critical pathogens. This has paved the way to search for newer antifungal drugs, as the current traditional drugs have many limitations, including narrow therapeutic indexes, high toxicity, poor oral bioavailability, limited efficacy and emerging drug resistance. Thus there is a pressing need for novel antifungal drugs to overcome these barriers and potently combat the rising threat of invasive fungal infections. This review covers the discovery and potential of one of the most promising antifungal drugs developed, Rezafungin, a derivative of Anidulafungin with unique pharmacokinetic properties that offers to manage extended treatment durations with shorter hospital stays. This Echinocandin, with its prolonged half-life that leads to once-weekly dosing, has the potential to be an Antifungal Prophylactic agent in high-risk patients. Hence, this review will be a substantial contribution to medical literature, promoting awareness and comprehending a cutting-edge therapeutic solution.

Keywords: Invasive fungal infection, Antifungal drugs, Rezafungin, Echinocandin, Fungi species.

APSECON/2025/COL/EP06

Headache-free horizons: Cutting-edge migraine solutions

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Abstract

Migraine is the most common neurological disorder characterized by recurrent moderate to severe headache often associated with sensory and autonomic symptoms. It causes both vasodilation and an inflammatory response in CNS blood vessels. Calcitonin gene-related peptide (CGRP), a neuropeptide belonging to the trigeminovascular system, has a central role in the migraine pathophysiology.

Rimegepant is an oral CGRP-targeting medication that acts as a CGRP receptor antagonist for the acute treatment of migraine to inhibit pain and other migraine-associated symptoms. Aripiprazole is available as an ODT, providing convenience and avoiding some first-pass hepatic metabolism compared with traditional tablets.

First of its kind in the CGRP inhibitors category which received FDA approval in 2020, Rimegepant is also the first to have good oral bioavailability as compared to parenteral CGRP therapies like erenumab.

The mechanism of action of Rimegepant involves selective binding to CGRP receptors thereby preventing the signal from being propagated for migraine pain and inflammation. Clinical trials have shown that it is very effective in providing rapid symptom relief while having a very low incidence of adverse effects. Most importantly, it is effective in patients who can't stand the traditional triptan therapy because of cardiovascular issues.

Compared to other available migraine medications, rimegepant is easier to use which increases adherence to treatment. Both internationally and domestically in India, rimegepant signifies a notable stride in the management of migraine and has positively impacted the lives of many migraine sufferers by providing them an efficacious and patient friendly pharmacological option.

Keywords: Migraine, Rimegepant, CGRP Antagonist, ODT, Safety

APSECON/2025/COL/EP07

Advancements in angina pectoris treatment: Emerging therapies and on-going research

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Abstract

As of 2024, no new FDA-approved drugs specifically target angina pectoris. However, the landscape of angina treatment continues to evolve through ongoing research aimed at improving anti-anginal efficacy, targeting novel mechanism and minimizing adverse effects. Current therapies, including nitrates, beta-blockers, calcium channel blockers, ranolazine and antiplatelet medications, remain the cornerstone of management for angina. Despite this, several newer cardiovascular drugs and therapies are in development or early-stage approval, potentially offering future benefits for patients with angina. For example, **bempedoic acid (Nexletol)**,approved for hyperlipidemia, helps manage cholesterol levels and may indirectly reduce angina symptoms by preventing atherosclerosis. **Levcromakalim**, an ATP-sensitive potassium (K_ATP) channel opener, is in clinical trials and shows promise in promoting vasodilation and improving coronary blood flow. Additionally, **vericiguat**, approved for heart failure, is being investigated for its potential to improve endothelial function and reduce ischemic heart disease symptoms, including angina. **Omecamtiv mecarbil**, a novel cardiac myosin activator, is under investigation for its potential to enhance cardiac function and alleviate ischemic symptoms in angina patients.

Conclusion: Ongoing clinical trials are exploring new targets such as inflammation modulation and microvascular function improvement. Emerging treatments, including gene therapies and RNA-based approaches, may offer novel strategies for managing angina pectoris in the future. While no major new drugs have been approved for angina as of 2024, advancements in cardiovascular treatments hold promise for improving outcomes in angina patients.

Keywords: Angina pectoris, FDA-approved drugs, Cardiovascular treatment, Anti-anginal efficacy

APSECON/2025/COL/EP08

Potential Role of Sechium-Edule in Management of Neurodegenerative Disorder

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Abstract

Aim: To evaluate the neuro-degenerative disease activity of Hydro alcoholic extract of the fruit of Sechium Edule using Elevated Plus Maze model.

Materials and method: The effect of neurodegenerative activity in Alzheimer's disease was evaluated in mice using the Elevated plus Maze method. The primary objective of this study was to investigate the potential of Hydro-alcoholic Fruit extract of Sechium edule as a memory enhancer. Learning and memory parameters were assessed using the Elevated Plus Maze technique. Mice were administered two different doses of Hydro-alcoholic Fruit extract of Sechium edule (200 and 400 mg/kg, orally) for a period of 9 successive days. Furthermore, it was able to reverse the amnesia induced by diazepam (1.0 mg/kg, IP) and scopolamine (0.2mg/ml, IP). Therefore, Hydro-alcoholic Fruit extract of Sechium edule holds promising potential therapeutic agent for restoring memory in elderly individuals with dementia.

Result: The Hydro-alcoholic Fruit extract of Sechium edule showed potential anti-amnesic activity at 400mg/kg in the elevated plus maze model by increasing the explorative behaviour and activity.

Conclusion: The Hydro-alcoholic Fruit extract of Sechium edule showed potential anti-amnesic activity.

Keywords: Sechium Edule Fruit, Hydro-alcoholic extract, Amnesia, Anti-amnesic, Elevated Plus Maze.

APSECON/2025/COL/OP05

Metabolite profiling and spectral analysis of extract using GC-MS study on alcohol induced liver steatosis and cirrhosis in swiss mice.

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Abstract

Objective: The main objective of this study was to determine the effect of hepatoprotective activity of plant *Euphorbia hirta* to find the phytoconstituents present in the extract and also by adopting the NMR Metabolomic technique for the diagnostic purpose.

Methodology : Swiss albino mice (30g), Fed with ad libitum + 10 % (v/v) ethanol for 2 ,4,8 weeks to develop staetosis, hepatitis and Cirrhosis stages .

Study Design:

Group I: Normal control.

Group II: Alcoholic induced steatosis model.

Group Ill: Alcoholic induced steato-hepatitis model.

Group IV: alcoholic induced cirrhosis model.

Group V: Plant *E.H* + Alcohol induced steatosis model.

Group VI: Plant *E.H* + Alcohol induced steato-hepatitis model.

Group VII: Plant *E.H* + Alcohol induced liver cirrhosis model.

Conclusion: The integration of GC-MS analysis to find Phytoconstituents and NMR spectroscopy presents a robust, non-invasive diagnostic tool that offers a viable alternative to biopsy methods. By enabling precise molecular profiling of biological extracts, these techniques provide comprehensive insights into disease biomarkers, reducing patient discomfort and associated risks. The findings underscore the potential of spectral analysis as a transformative approach in early disease detection and monitoring, paving the way for more patient-friendly diagnostic modalities.

Results: The proposed project mainly focuses on finding small molecular weight metabolite biomarker for detection of ALD. NMR spectroscopy has proven to be particularly well suited for this study.

Key words: *Euphorbia hirta*, NMR, ALD.

APSECON/2025/COL/OP06

CRISPR-Cas9: Revolutionizing genetic modifications

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Abstract

Background: The CRISPR-Cas9 system, derived from the adaptive immune response of bacteria, has emerged as a groundbreaking tool for genetic modification. Its ability to precisely edit DNA sequences has transformed genetics, molecular biology and biotechnology. The simplicity, efficiency and versatility of CRISPR-Cas9 have made it a preferred method for gene editing across various organisms, including plants, animals and human cells.

Objectives: This presentation aims to provide an overview of CRISPR-Cas9 technology, focusing on its mechanism of action, applications in research and medicine and the ethical considerations surrounding its use. Specific objectives include:

1) explaining the molecular components and functioning of the CRISPR-Cas9 system;

2) exploring its applications in gene therapy, agriculture and disease modelling; and

3) discussing the ethical implications and regulatory challenges associated with gene editing technologies.

Results: CRISPR-Cas9 has demonstrated remarkable success in various applications. In gene therapy, clinical trials have shown promising results in treating genetic disorders such as sickle cell disease and beta-thalassemia, leading to significant health improvements. In agricultural biotechnology, CRISPR-Cas9 has been employed to develop crops with enhanced traits, such as drought resistance and improved nutritional profiles. Additionally, it has facilitated the creation of accurate disease models, aiding in the understanding of disease mechanisms and therapeutic development.

Conclusion: CRISPR-Cas9 represents a paradigm shift in genetic modification, offering unprecedented precision and efficiency. While its applications promise significant advancements, ethical considerations and regulatory frameworks must be addressed to ensure responsible use. Continued research and dialogue are essential to maximize the benefits of CRISPR-Cas9 while upholding ethical standards in genetic research and therapy.

Key words : CRISPR**,** genetics, molecular biology, DNA sequences.

APSECON/2025/COL/OP07

Exploring Soluble Epoxide Hydrolase Inhibitors For Alzheimer's Disease: A Preclinical Evaluation Of *Nigella sativa*

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Abstract

Introduction: Alzheimer's disease (AD) is spreading rapidly due to its varied symptoms, unclear diagnosis, multiple causes and the limitations of current treatments. Existing drugs like donepezil, rivastigmine and memantine provide only symptomatic relief by affecting neurotransmitter levels such as acetylcholine and glutamate. Efforts are focused on discovering drugs that can intervene in the disease progression. Research has shown that soluble epoxide hydrolase (sEH) levels are increased in hippocampal astrocytes during AD and its genetic deletion improves cognitive functions like learning and memory in animal models, suggesting sEHI's role in age-related cognitive decline and neurodegenerative diseases. Objective: To explore the therapeutic potential of promising herbal extract of *Nigella Sativa* with sEH inhibitory activity in an Aβ1-42 induced mouse model of Alzheimer's disease.

Method: C57BL/6 female mice were subjected to icv using a Hamilton syringe with 26-gauge stainless steel needle using the stereotaxic apparatus to induce AD, animals were treated with test extract for 21 days p.o and the behavioral assessment was made by Morris Water Maze. Olfactory function was assessed by the buried pellet test and passive avoidance were assessed by the step-down latency test. Further excised mice brains were used for performing biochemical and histopathological, studies.

Results: The cognitive impairment was assessed by the MWM wherein the latency to reach target quadrant was assessed in addition to the time spent in quadrant zone. The animals treated with standard drug TPPU showed less time to reach the target quadrant. Whereas *Nigella sativa* treated animals (only at high doses) showed reduced latency to reach the quadrant. TPPU was found to improve behavioral performance, such as olfactory recognition time was decreased in treatment groups in comparison with disease control whereas in the Buried pellet test *Nigella Sativa* treated group showed less time to unbury the pellet. Conclusion: Our findings demonstrated that the selected extract shows a protective effect against amyloid beta-induced AD based on behavioral assessment. However complete analysis of the study is going on, still, a complete result interpretation is still necessary to conclude the study.

Keywords: Alzheimer's disease, *Nigella Sativa*, TPPU, Soluble epoxide hydrolase, ICV (Intracerebroventricular)

APSECON/2025/COL/EP08

Ibrexafungerp: A novel oral triterpenoid antifungal drug

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Abstract

Background: Ibrexafungerp is a class of Triterpinoid antifungal agents and used to treat Vulvovaginal Candidiasis (vaginal yeast infection). An estimated 75% of women will have at least one episode of Vulovaginal Candidiasis and 40 to 45% will have two or more episodes in their lifetime.

Objectives: It is with this that we shall review current research and literature on behavioral, cognitive, and educational deficits due to the specific disorders, emphasizing the importance of early identification and intervention. Moreover, the forthcoming presentation is meant to prefer evidence-based solutions that will reach and impact positively on educators, as well as caregivers in encouraging, motivating, training and supporting those with **Vulvovaginal Candidasis** (**VCC)** and **Recurrent Vulvovaginal Candidiasis (RVVC)** together with adapted instructional strategies, intensive remedial programs and also incorporating the most modern communication technology into the learning environment.

About drugs: Unlike most other antifungal medications, ibrexafungerp works by inhibiting glucan synthase, a crucial enzyme for fungal cell wall synthesis, leading to cell death (fungicidal activity).

It is effective against a wide range of Candida species, including those resistant to other antifungal agents like fluconazole. Ibrexafungerp is taken orally, providing a convenient treatment option compared to topical antifungal creams. Studies have indicated that ibrexafungerp may also be useful in reducing the recurrence rate of vaginal yeast infections.

Conclusion: Selection of drug due to:

(1) Active against multiple strains of Candida that are resistant to azoles and echinocandins .

(2) Non serious adverse events: GIT symptoms like nausea, vomiting, diarrhea and abdominal pain.

(3) Orally absorbed, but polyenes are not absorbed.

Keywords: VCC, RVVC, Intervention Strategy.

APSECON/2025/COL/EP09

Covid-19 in dialysis: Clinical impact, immune response, prevention and treatment

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Abstract

The COVID-19 pandemic has significantly affected patients with kidney disease, particularly those undergoing dialysis. Research indicates that these patients are at a heightened risk of severe outcomes, including increased mortality and complications related to their renal health. The COVID- 19 pandemic has profound adverse effects on the population on dialysis. Patients requiring dialysis are at an increased risk of SARS-CoV-2 infection and mortality and many have experienced psychological distress as well as delayed or suboptimal care. COVID-19 survivors have prolonged viral shedding, but generally develop a robust and long-lasting humoral immune response that correlates with initial disease severity. However, protection against reinfection is incomplete A growing body of evidence reveals delayed and blunted immune responses to SARS-CoV-2 vaccination. Administration of a third dose within 1 to 2 months of prime-boost vaccination significantly increases antibody levels, in particular in patients with poor initial responses. Patients on dialysis have inferior immune responses to adenoviral vector vaccines than to mRNA vaccines The immunogenicity of the mRNA- 1273 vaccine is markedly better than that of the BNT162b2 vaccine, most likely by virtue of its higher mRNA content. Despite suboptimal immune responses in patients on dialysis, preliminary data suggest that vaccination partially protects against infection and severe disease requiring hospitalization. However, progressive waning of immunity and emergence of SARS-CoV-2 variants with a high potential of immune escape call for a booster dose in all patients on dialysis 4 to 6 months after prime-boost vaccination. Patients with persistent poor vaccine responses may be candidates for primary prophylaxis strategies. In the absence of specific data in patients on dialysis, therapeutic strategies in the event of established COVID-19 must be extrapolated from evidence obtained in the population not on dialysis. Neutralizing monoclonal antibodies may be an attractive option after a high-risk exposure or during the early course of infection.

Key Words: COVID-19, dialysis, hemodialysis, immune response, SARS-CoV-2, treatment, vaccination.

APSECON/2025/COL/OEP02

Protective effect of *Phaseolus vulgaris* seed against cisplatin-induced nephrotoxicity

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Abstract

Introduction: About 20% of nephrotoxicity is induced and caused by drugs.

Problems statement/Objective: 5% of hospitalized patients and between 20%-30% of those in Intensive Care Units (ICUs) developed acute kidney injury (AKI), with nearly 20% of these cases linked to the use of nephrotoxic drugs. kidney disease has become a major global health burden, accounting for one million (1 in 60) deaths worldwide every year with an increase of>40% of the mortality rate associated with kidney disease in the past 20 years. To address this issue, we can utilize herbal treatments.

Approach/ Procedure: By in vivo method on animals.

Result & Discussion: The seeds of *Phaseolus vulgaris* help reduce nephrotoxicity. They possess antioxidant properties and provide other important nutrients.

Conclusion: P.V. seed 100 mg/kg,200mg/kg, 400mg/kg improved cisplatin-induced renal dysfunction in rats. This protective effect is related to the inhibition of mitochondria-mediated apoptosis.

Key words: *Phaseolus vulgaris,*AKI, ICU.

APSECON/2025/COL/OEP02

Teratogenic effect of drugs at different stages of pregnancy

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Abstract

Teratogenicity refers to the capacity of certain substances, known as teratogens, to cause birth defects or abnormalities in a developing embryo or foetus. This concept is critical in fields such as medical genetics, toxicology and pharmacology, where understanding the effects of various agents on prenatal development is essential for preventing congenital disorders. Teratogens play a crucial role in the 4-5% of infants who are born with physical or functional abnormalities in this world. Teratogens are recognized for their capacity to harm foetuses or neonates. Pregnancy-related exposure to certain substances may result in birth abnormalities or malformations of the foetus, such as behavioural or emotional problems, low IQ, physical deformities, etc. Because teratogens are more likely to cause harm between 15 to 60 days during organogenesis, major abnormalities are more prevalent in early embryos than in newborns. There are many different kinds of medications and some of those that are often used during pregnancy can have teratogenic effects during various trimesters. Pregnancy is often separated into three trimesters. According to several studies, 70% of pregnant women consume at least two or three medications, including prescription pharmaceuticals and over-the- counter medicines, throughout pregnancy or the first trimester of organogenesis. The current study focuses on how pregnancy and physiology during that time influences the pharmacokinetics of drugs that may reach and harm the foetus depending on the stage of pregnancy, as well as various factors affecting teratogenicity and concrete steps to address them.

Keywords: Teratogens, Stages of Pregnancy, Physical deformities, Foetal malformations.

CHEMISTRY, BOTANY & ZOOLOGY

APSECON/2025/CBZ/EP01

"A NOVEL ANALYTICAL METHOD DEVELOPMENT AND VALIDATION BY USING ZERO ORDER UV- SPECTROPHOTOMETRIC METHOD".

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Abstract

Aim: The present article is an Analytical Development and Validation of Irinotecan HCl Trihydrate in bulk and Pharmaceutical dosage form using Zero-order UV Spectrophotometric method.

Method: The developed analytical method employs the measurement of Zero-order at an absorbance maximum (λmax) within the range of 221nm by using 99% AR grade Methanol as a solvent and the developed method is validated for Linearity, Accuracy, Precision, LOD, LOQ and Ruggedness according to ICH guidelines

Result: The method exhibits excellent linearity for the concentration range of 10 to 50 µg/ml with a high correlation coefficient(r2) of 0.9999 as described by the regression equation Y= 0.0189X +0.0022, the %RSD values was found to be <2% for Precision, Accuracy these obtained range value indicates that the developed method is précised and accurate and the LOQ and LOD for estimation of Irinotecan HCl Trihydrate was found to be 0.384µg/ml and 1.16µg/ml respectively.

Conclusion: The present developed Zero-order UV-Spectrophotometric method was accomplishing the validation parameters according to ICH guidelines for Linearity, Accuracy, Precision, LOD, LOQ and Ruggedness. Hence the developed method is simple, highly accurate, novel and can be apply for the estimation of Irinotecan HCl Trihydrate in Pharmaceutical dosage form.

Key words: Irinotecan HCl Trihydrate, UV Spectrophotometric, ICH guidelines, Zero order

APSECON/2025/CBZ/OOP01

Development and validation of chromatographic method for the simultaneous estimation of *curcumin* and *chrysin* in dosage form

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Abstract

Introduction: *Curcumin* and *Chrysin* are two well-known drugs which have some pharmacological activities and have HPLC methods for their estimation individually but no method is validated in combination, as *Curcumin* and *Chrysin* together showed promising anti-cancer activity. So, the current study focuses on the development of HPLC method for the simultaneous estimation of *Curcumin* and *Chrysin* in pharmaceutical dosage forms and its validation using various parameters according to the ICH Guidelines.

Objectives: The objective of this research work is to develop and validate the spectroscopic and chromatographic method for the simultaneous estimation of *Curcumin* and *Chrysin.*

Method: The mobile phase for the HPLC technique used was Acetonitrile:water (70:30) .

Results: The method found to be linear for both *Curcumin* and *Chrysin* in the concentration range of 2-10 µg/ml with correlation coefficient (r^2) of 0.9998 and 0.9993 for 358 nm respectively by HPLC method. Ruggedness, robustness and precision data showed %RSD < 2%.

Conclusion: The developed HPLC method was found to be simple, precise, specific and sensitive for the simultaneous estimation of *Curcumin* and *Chrysin.* Hence this method can be efficiently used for the quality control analysis of *Curcumin* and *Chrysin.*

Key words: HPLC, *Cucumin, Chrysin*.

APSECON/2025/CBZ/OOP02

Identification of Mao-B selective inhibitors: Virtual screening and admet evaluation of methylene dioxy cinnamic acid hydrazone derivatives.

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Abstract

Methylene dioxy cinnamic acid derivatives have been reported for their potential monoamine oxidase B (MAO-B) inhibitory activity. In this study, a virtual library of methylene dioxy cinnamic acid hydrazone derivatives were generated using the Virtual Library Enumeration panel in the Schrodinger Suite. The library, comprising 300 derivatives synthesized in silico by incorporating various nitro-substituted aryl amines, was subjected to a systematic virtual screening workflow to identify selective MAO-B inhibitors.

The screening process involved High-Throughput Virtual Screening (HTVS), which retained the top 50% of molecules based on their docking scores. The selected compounds were further refined using Standard Precision (SP) docking, narrowing the library to the top 25% of candidates. These compounds then underwent Extra Precision (XP) docking, identifying the 15 highest-ranking molecules as potential MAO-B inhibitors.

To ensure the drug-likeness and safety of the identified hits, an ADMET (Absorption, Distribution, Metabolism, Excretion and Toxicity) evaluation was performed using the QikProp tool. This analysis highlighted molecules with minimal predicted toxicity and favourable pharmacokinetic profiles, making them promising candidates for further development.

This study highlights the application of computational approaches in drug discovery to identify and prioritize MAO-B selective inhibitors from a virtual library. The identified methylene dioxy cinnamic acid hydrazone derivatives represent potential leads for the treatment of MAO-B-related disorders and warrant further experimental validation.

Key words: Methylene dioxy cinnamic acid, HTVS, ADMET.

APSECON2025CBZEP02

Target identification for hypertension and renal failure via bioinformatic pipelines

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Abstract

Hypertension are serious global abnormal conditions which can be well maintained with lifestyle changes. Renal failure is the disease occurs when illness, infection or injury damage to the kidney. The main study was to unravel genetic predisposition underlying the development of hypertension and renal failure and to identify and validate the druggable common targets for hypertension and renal failure via Venn-Bioinformatics Approx. 200 million adults in India are affected by hypertension cardiovascular diseases are reported to be responsible for around 28% of all deaths in India. It can be controlled through lifestyle changes and medications; it is generally not curable in conventional sense. Estimates suggest that around 10-15%of adults in India are affected by CKD, with varying stages of severity. While specific on the number of deaths attributed to renal failure alone may vary, itself that requires either dialysis or kidney transplantation for survive. Drug repurposing offers a strategic and cost-effective approach to drug discovery and development, leveraging existing knowledge and resources to bring new therapeutic options to patients more quickly and efficiently. Bioinformatics continues to advance our understanding of biological systems at molecular and genomic levels, driving discoveries in medicine. The goal of our project was to identify common drugs for both hypertension as well as renal failure.

Keywords: Hypertension, Renal failure, Venn-Bioinformatics, Drug repurposing.

APSECON/2025/CBZ/EP03

Stability indicating HPLC method for quantification of ticarcillin and clavulanic acid In pharmaceutical dosage form

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Abstract

A stability-indicating high-performance liquid chromatography (HPLC) method was developed for the quantification of ticarcillin and clavulanic acid in pharmaceutical dosage forms. The method utilized a Syncrosis C8 column (100 x 4.6 mm, 3 µm) and employed a gradient elution technique with a mobile phase consisting of 0.1% formic acid in water and acetonitrile. The gradient profile included an initial composition of 80% aqueous phase and 20% organic phase, transitioning to 5% aqueous and 95% organic, before returning to the initial conditions. Detection was carried out at 235 nm with a flow rate of 0.8 ml/min.The retention times for ticarcillin and clavulanic acid were determined to be approximately 6.14 minutes. The method demonstrated excellent linearity over a concentration range of 0.5-2.5 µg/ml for both compounds, with a regression coefficient (r^2) of 0.999, indicating high reliability. Validation studies confirmed the method's robustness, accuracy, and precision, with relative standard deviations below 2% and recovery rates between 98% and 102%. The method effectively distinguished the active ingredients from degradation products, making it suitable for routine quality control and stability testing in pharmaceutical applications. This study fulfills ICH guidelines for analytical method validation, ensuring its applicability in pharmaceutical settings.

Keywords: Ticarcillin, Clavulanic acid, Stability, ICH guidelines, HPLC

APSECON/2025/CBZ/OOP03

Validation of analytical method for curcumin and metformin simultaneous analysis in bulk and pharmaceutical formulation to ensure accuracy and precision

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Abstract

Introduction: Curcumin and Metformin are two widely recognized drugs with anti-inflammatory and anti-diabetic properties, respectively. However, when used together, they are known to be powerful anticancer agents. Research has shown that the combination of metformin and curcumin promotes apoptosis in the LNCaP prostate cancer cell line without impacting the cell cycle.

Method: UV-Spectrophotometer was carried out using Lab Solution software and High-performance liquid chromatography (HPLC) analysis was conducted using the Agilent Technologies Model 1220 Infinity II LC system with Open Lab software. A VWD type lamp was employed, with the flow rate set to 1 ml/min. The mobile phase consisted of acetonitrile and water in a 70:30 ratio. Effluents were monitored at 235 nm and 425 nm for the detection of metformin and curcumin, respectively.

Results: The UV and HPLC method showed linearity for both curcumin and metformin in the concentration range of 2-10 µg/ml, with correlation coefficients (r^2) of 0.9953 at 425 nm and 0.9949 at 235 nm. The precision, robustness and ruggedness of the method were confirmed, with %RSD values less than 2%.

Conclusion: The UV and HPLC methodology was more accurate, sensitive and cost-effective than the previously developed UV-Spectroscopy and HPLC method due to its quicker action. The evaluation of Curcumin and Metformin was found to be appropriate for the approach created for UV Spectroscopy and HPLC. The established UV-Spectroscopy and HPLC approach for routinely analysing the medication Curcumin and Metformin is accurate, linear, precise, simple and robust.

Key words: UV, HPLC,Metformin, Curcumin.

APSECON/2025/CBZ/OOP04

Synthesis and *In-Vitro* Alpha Amylase Inhibitory Activity of Benzimidazole Analogues

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Abstract

This research focuses on the synthesis of benzimidazole derivatives and their inhibitory activity on the alpha-amylase enzyme, assessed using the DNSA method. Additionally, the enzyme kinetics of alpha-amylase in the presence of synthesized benzimidazole derivatives were studied and compared to the standard drug, Acarbose. The investigation also included an *In-silico* analysis of the synthesized benzimidazole ligands with the alpha-amylase enzyme gene. The derivatives were synthesized by reacting o-phenylenediamine with substituted aromatic acids and aldehydes and their structures were confirmed using infrared spectroscopy and ^{1}H NMR. The alpha-amylase inhibition assay, conducted using UV-Visible spectrophotometry, revealed that among the derivatives (BENZOLE, 2PBI, PHABA, TMOXY, DMOXY, and VNLN), PHABA exhibited the highest percentage inhibition (50%) compared to the standard Acarbose (85.12%). The IC50 values determined from absorbance data showed that BENZOLE's IC50 (119.2 µM) was comparable to Acarbose (76.33 µM). Enzyme kinetics analysis indicated that the synthesized derivatives inhibited the enzyme through a non-competitive mechanism, whereas Acarbose exhibited competitive inhibition, as evidenced by comparisons of Vmax and Km values. Furthermore, in-silico docking studies demonstrated that the synthesized ligands exhibited favourable binding affinities with the alpha-amylase gene (AMY2B), with DMOXY showing a binding affinity of -7.7 kcal/mol compared to Acarbose's -8.1 kcal/mol. These findings suggest that the synthesized benzimidazole derivatives possess moderate inhibitory activity against alpha-amylase.

Keywords: Alpha–amylase, Acarbose, IC50, Benzimidazole, Enzyme kinetics.

AYUSH
&
INDUSTRIAL PHARMACY

APSECON/2025/AYIP/OOP01

Are all medicinal plants safe? An *in silico* analysis

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Abstract

Objective: The universal assertion that all medicinal plants are safe and devoid of side effects is widely accepted; however, toxicological evidence to support this claim is lacking. Plants, whether medicinal or toxic, exert their effects through phytochemicals or secondary metabolites, producing either efficacy (desirable effects) or toxicity (undesirable effects). While isolating individual phytochemicals to study their effects is challenging, advancements in computational toxicology now enable the prediction of individual phytochemical toxicity using *In Silico* tools.

Methodology: To investigate the safety of medicinal plants, we employed the VEGA-QSAR *In Silico* tool to predict the toxicities of phytochemicals obtained from medicinal and toxic plants, utilizing databases such as the KNApSAcK family and T3DB. The phytochemicals were processed to eliminate duplications and common phytochemicals between toxic and medicinal plants using InterVenn online tool, and subsequently classified as alkaloids, flavonoids, glycosides, phenylpropanoids, and terpenoids using the NPClassifier online tool. Twenty-six different toxicities were examined under various categories, including genotoxicity, carcinogenicity, developmental toxicity, endocrine effects, hepatotoxicity, acute toxicity, local toxicity, NOAELs, and LOAELs. Statistical analysis was conducted to compare the toxicity results obtained for medicinal plants, toxic plants, and each phytochemical class.

Result: Surprisingly, the predicted toxicities in medicinal plants were either similar to or higher than those in toxic plants. Among the different phytochemical classes, flavonoids exhibited statistically significant higher toxicity compared to other classes of phytochemicals in both medicinal and toxic plants. It is important to note that the prediction of toxicity using *In Silico* tools is qualitative, indicating the potential for toxicity in plants, regardless of their classification as medicinal or toxic. A limitation of this method is its inability to provide information on the quantity of phytochemicals absorbed and available at the site of action. The reduced toxicity of these medicinal plants may be attributed to traditional detoxification methods employed in Ayurveda, Siddha, and Unani practices.

Conclusion: In conclusion, based on the toxicity predictions of phytochemicals, it is evident that not all medicinal herbs are inherently safe; therefore, their consumption should be guided by practitioners of the AYUSH system.

Key words: *In Silico* tools, Medicinal plants, Toxic plants, Phytochemicals

APSECON/2025/AYIP/OOP02

Effect of permeation enhancers on unidirectional buccal patches of sumatriptan succinate for buccal drug delivery

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Abstract

This study aimed to prepare and evaluate mucoadhesive buccal patches of Sumatriptan Succinate (SUS) made from natural polymers to improve bioavailability, patient compliance, and dose-dependent adverse effects associated with currently available dosage forms. A total of 12 formulations were formulated by the solvent casting method using a 32 factorial design. The base polymer was water-soluble polysaccharide Na CMC, PVA, CH, Cp 934P; HPMC and PVP-K30 were also added in various amounts. PEG and PG were used as the plasticizer. The polymer-plasticizer solution, SUS, and SS were combined and dried before being cut into 2 cm patches. The patch was water-resistant-backed and stored at room temperature in an airtight glass jar. The patches evaluated for mass uniformity, film thickness, folding endurance, drug content, drug loading efficiency and surface pH. Optimum formulations and were subjected to additional studies, including swelling studies, in vitro residence time, in vitro drug release, accelerated stability experiments. From this studies, it is concluded that, the buccal patches of SUS can be formulated using PU, SA, Carbapol 934P, PVA, PVP K-30, NaCMC, HPMC and CH as the mucoadhesive polymers to obtain satisfactory unidirectional drug release with adequate mucoadhesion. The permeation is further customized by using different permeation enhancers.

Keywords: Sumatriptan Succinate, mucoadhesive buccal patches, migraine, various permeation enhancers, permeability coefficient.

APSECON/2025/AYIP/OOP03

Stability and efficacy of probiotic gummies: A comprehensive study

Salman M*, Nagendra R, Mohammed Swaleh, Irfanulla Sharieff, Venkatesh, Hanumanthachar Joshi
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Abstract

Probiotics have been said to assist healthy immunological and digestive systems. *B.coagulans* has become a focus of research due to its high temperature stable, highly viable, economical and Versatile in nature. The ultimate objective of the present research work is to incorporate *B.coagulans* strain into the gummies, which will benefit the human health. Gummies are formulated by Trio method. Optimization studies for ingredients was carried out to determine the concentration which is ideal for the preparation. Two different formulations were prepared with the help of Optimization data using sucrose, gelatin and pectin as the base for the preparation of gummies. All the prepared probiotic gummies were subjected to various evaluation parameters like pre- formulation studies, microbial analysis, nutritional facts and Stability data. The results of microbial analysis shows that viability of probiotic in gummy is not less than 500 million spores /gummy, total yeast and mold count is < 10 Cfu /gummy and Pathogen are absent in the formulations. Nutritional facts determines the content like Carbohydrate and Total Sugar content varied from 75.1% to 82.76% w/w and 65.4% to 79.91% w/w. Fat and protein in gummies with *B.coagulans* varied from 0.03 % to 0.78 % and 9.9 % to < 1%, respectively. The energy value of gummies varied from 338 kcal/100 g to 340 kcal/100gm. Short-term stability Studies indicate that there are no significant changes in physical characteristics, viable count, traces of yeast & mold and pathogens after 180 days of storage at 25±2º C with 60±5% RH.

KEYWORDS: *B.coagulans*, Viability, Nutritional facts, Stability studies.

APSECON/2025/AYIP/OOP04

Effect of different herbal tranquilizers on anxiety, insomnia and mental illness

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Abstract

Objective: The objective of this review is to analyze and summarize the existing literature on the efficacy, safety, and mechanisms of action of various herbal tranquilizers in the treatment of anxiety, insomnia and mental illness.

Method: A thorough literature review was conducted performed in PubMed and Google Scholar. Studies published between 2000 and 2024 focusing on herbal interventions for anxiety, insomnia and mental disorders were included. Randomized controlled trials, meta-analyses, systematic reviews and observational studies were analyzed to evaluate the effectiveness of popular herbal tranquilizers such as *Valeriana officinalis*, *Passiflora incarnata*, *Withania somnifera*, and *Melissa officinalis*.

Results: *Valeriana officinalis* and *Passiflora incarnata* have demonstrated significant improvements in sleep quality and anxiety reduction, comparable to conventional medications but with fewer side effects. Adaptogenic herbs like *Withania somnifera* showed potential in alleviating stress-related disorders and enhancing overall mental well-being. However, variability in formulations, dosages, and study methodologies pose challenges in drawing definitive conclusions.

Discussion: Herbal tranquilizers present a promising natural alternative for managing anxiety, insomnia, and mental illness. Their multifaceted mechanisms of action, including modulation of GABAergic pathways, antioxidant effects, and adaptogenic properties, offer a holistic approach to mental health care. However, regulatory considerations and quality control measures need to be addressed to facilitate their integration into mainstream therapeutic practices.

Keywords: Tranquilizers, Anxiety, Insomnia, Mental Illness.

PHARMACOVIGILANCE

&

PHARMACOECONOMICS

APSECON/2025/PP/EP01

Bioinformatics and disproportionality analysis of novel signals of atorvastatin using US food and drug administration adverse event reporting system (FAERS) database

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Abstract

Background: Atorvastatin, HMG-CoA reductase inhibitor was considered as first-line mec for the treatment of dyslipidemia and cardiovascular diseases.

Objectives: The present study aimed to detect a potential adverse event reported for atorv using data-mining algorithms and molecular docking.

Methodology: Various adverse events reported in FAERS database from 1996 to 202 analyzed to identify the potential signals caused by atorvastatin. The disproportionality a was conducted using OpenVigil 2 software package designed for complete case analyses. Th mining algorithms like Reporting Odds Ratio (ROR) and Proportional Reporting Ratio (PRI used. The signal is considered positive if n>2 (Adverse event of interest), chisq>4 and PRR> genes related with novel signal was identified by literature review and docked with atorv using soft wares such as BIOVIA discovery studio, Swiss PDB viewer, PyRx and Pymol.

Results: A total of 41,864 ADRs were reported from 1997 to June 2024 for atorvastatin. 12.8 % (5,397) and 4.01 % (1,678) cases were reported in 2023 and 2024 respectively. Th signal identified for atorvastatin induced biliary cirrhosis is 4. The ROR and PRR value found to be 7.76 (2.464; 24.47). The chi-Squared value with Yate's correction was 11.22 confirms biliary cirrhosis as a positive signal. The genes of human leukocyte antigen loci DRB 1 and non HLA CTLA-4 are responsible for biliary cirrhosis. Docking of HLA-DRI CLTA-4 with atorvastatin revealed the binding affinity of –7.9 and –7.7 respectively.

Conclusion: The results obtained from disproportionate analysis corroborates that atorvas significantly associated with biliary cirrhosis and can be a potential ADR. Docking confirms DRB1 gene to be more associated with biliary cirrhosis than non HLA CTLA-4 as its l affinity is high. However, further pharmacogenetics and pharmacogenomics studies are ne confirm the signal and improve patient safety.

Key words: Proportional Reporting Ratio, Atorvastatin, HMG-CoA reductase inhibitor.

APSECON/2025/PP/EP02

"FAERS-based disproportionality analysis and docking studies reveal a potential signal for nusinersen"

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A**bstract**

Background: Nusinersen is a groundbreaking therapy for spinal muscular atrophy. While its benefits are well-documented, adverse drug reactions (ADRs) like nephrocalcinosis require systematic investigation. Signal detection is essential for identifying these potential risks.

Objectives: This study aimed to identify and evaluate novel signals reported for Nusinersen, utilizing the USFDA Adverse Event Reporting System (FAERS) database. Additionally, a molecular docking study was conducted to explore the binding affinity of associated genes and proteins.

Methodology: A disproportionality analysis was performed using the FAERS database for Nusinersen. Reporting Odds Ratio (ROR) and Proportional Reporting Ratio (PRR) were calculated using the Open Vigil database, with positive signals defined as PRR $\geq$ 2 and ROR - 1.96SE > 2. Bioinformatics tools such as STITCH, STRING, and HuGE Navigator were employed to identify nephrocalcinosis-associated proteins and genes. Molecular docking was then carried out using BIOVIA Discovery Studio, PyRx, Pymol, and Swiss PDB Viewer to assess the binding affinities of these targets

Results: Analysis of 27644899 FAERS reports revealed 5772 cases associated with Nusinersen, of which 218 cases pertained to nephrocalcinosis. The Open Vigil data showed 4 events of interest for nephrocalcinosis. The ROR was found to be 14.941 (5.588; 39.954), and PRR 14.932 (5.588; 39.9) was confirming the presence of a signal. Bioinformatics analysis identified FGF23 and SLC7A9 as potential contributors to nephrocalcinosis, with the highest binding affinities determined through docking studies.

Conclusion: The study identified nephrocalcinosis as a potential signal for Nusinersen. The FGF23 and SLC7A9 genes and proteins showed an association between Nusinersen and nephrocalcinosis. These findings underscore the need for further pharmacogenetic and epidemiological research to confirm and expand upon these results.

Keywords: Nusinersen, Nephrocalcinosis, Signal Detection, Molecular Docking, FAERS

APSECON/2025/PP/EP03

Study on prevalence of gestational diabetes mellitus among pregnant woman in India and associated risk factors

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Abstract

Objective: Gestational diabetes mellitus (GDM), defined as "carbohydrate intolerance of varying degrees of severity with onset or first recognition during pregnancy," is associated with high-risk maternal and neonatal condition which increases the risk of Type 2 diabetes in mothers and their infants.

Method: This review provides an overview of the study analysed using data collected from National Family Health Survey (NFHS) allowing the percentage prevalence calculation of GDM.

Result: The prevalence of gestational diabetes has been reported to range from 3.8% to 45 % in various regions of India. Pregnant woman with associated risk factors such as advanced age, high BMI, positive family history of DM and prior history of GDM had higher prevalence rates.

Conclusion: The low prevalence of GDM may not be clinically significant but has negative repercussions on the mother and her child cannot be overlooked. Thus, it is essential to curb GDM since its inception and save a generation ahead from the risk of diabetes and other diseases.

Keywords: Gestational diabetes mellitus, maternal, neonatal, National Family Health Survey.

APSECON/2025/PP/OP01

Chronic cough potentially induced by levetiracetam: A novel case report

Premalatha Adiker

Abstract

The patient is a 22-year-old male admitted to the surgical ward for an exploratory laparotomy due to a stab injury with rent closure of the mesocolon. His medical history includes a seizure disorder diagnosed four years ago, managed with levetiracetam until two years prior when he discontinued the medication. He also has hypothyroidism and a history of nasopharyngeal malignancy. The patient presented with blunt abdominal trauma and a stab injury as his primary complaints. Following stabilization, levetiracetam 500 mg was reintroduced two days post-admission to manage his seizure disorder. However, on the day of reintroduction, the patient developed a persistent cough that progressively worsened as the medication continued. The cough was successfully alleviated with symptomatic treatment, suggesting a potential link between levetiracetam and the onset of this adverse effect.

While levetiracetam is widely recognized as a well-tolerated antiepileptic drug with a favorable safety profile, adverse effects such as behavioral disturbances, fatigue, and dizziness are more commonly reported. Respiratory symptoms, including cough, are exceedingly rare and not well-documented in existing literature. This case represents a novel report of a chronic cough potentially associated with levetiracetam therapy.The temporal relationship between the initiation of levetiracetam and the onset of symptoms strengthens the likelihood of a causal relationship. Clinicians should remain vigilant for atypical side effects, even with medications considered to have low toxicity. Further research and pharmacovigilance are warranted to explore this potential adverse effect and its underlying mechanisms.

Key words: Levetiracetam; Chronic cough; Adverse effect; Pharmacovigilance.

APSECON/2025/PP/EP04

Awareness on Adverse Drug Reactions

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Abstract: ADRs are the most common cause of morbidity and mortality. Pharmacists can play an important role in ADR reporting by increasing the number as well as the quality of submitted report. The objective is to asses knowledge, behaviours and experiences of Community Pharmacists, Nurses and public relating to adverse drug reaction (ADR) in Mysuru city, and to create awareness accordingly. A cross- sectional study was conducted using a self-administered questionnaire. A convenience sample of 51 community pharmacists, 52 nurses and 77 people were studied in Mysuru city. Statistical results were plotted on Bar graphs and Pie charts. Posters and Pamphlets were used to create awareness. Results shows lower awareness on the ADR and a poor reporting rate. Reasons for not reporting ADRs to ADR Monitoring Centre include Lack of awareness about the method of reporting, misconception that reporting ADRs is the duty of physician and ADRs are simple and should not be reported.

Key words: Adverse Drug Reactions , ADR reporting, Pharmacists & Nurses.

PHARMACY PRATICE, PATIENT CARE & HOSPITAL PHARMACY

APSECON/2025/PPH/EP01

Whispers of the microscopic realm: chronicles of the human metapneumovirus

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Background: Human Metapneumovirus (HMPV): Part of the Pneumoviridae family, negative-sense single-strand RNA virus.
Discovery: First observed in 2001 by Dutch researchers; evidence of presence dates back to 1958. **Significance:** Comparable to Respiratory Syncytial Virus (RSV) in causing respiratory infections, particularly in infants, the elderly, and immunocompromised individuals.

Objectives: To understand the epidemiology, clinical manifestations, and treatment options for HMPV infections.
To highlight the risks associated with HMPV in vulnerable populations.

Methodology: Isolation and Identification: First isolated in the Netherlands using RNA arbitrarily primed PCR (RAP-PCR) technique.
Serological Studies: Indicated the virus had been circulating for over 50 years.
Genetic Analysis: Identified two major groups and minor genetic clusters.

Results:
Symptoms: Range from mild (cough, nasal congestion) to severe (wheezing, pneumonia).
Incubation Period: 3-6 days; symptoms typically resolve within 2-5 days.
Risk Factors: Higher risk for infants, elderly, and immunocompromised individuals; significant hospitalization rates and potential complications.
Patient Characteristics: 80% have underlying chronic diseases; 3.3 times higher infection risk in those over 65; 4.9% hospital mortality rate.

Conclusion: HMPV is a significant respiratory pathogen with serious implications for vulnerable populations.
Treatment focuses on supportive care and severe case management, with a need for close monitoring due to potential complications, including cardiovascular risks.

Key Words : Human Metapneumovirus (HMPV)**,** Pneumoviridae**,** Respiratory Syncytial Virus (RSV)**,** Respiratory infections**,** Epidemiology**,** Clinical manifestations**,** Treatment options**,** Vulnerable populations,Hospitalization rates**,** Complications

APSECON/2025/PPH/EP11

POST- ACUTE SEQUELAE AND CLINICO- EPIDEMIOLOGICAL PROFILE OF SARS-COV-2 INFECTION AMONG VACCINATED POPULATION

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Abstract

Background: With the global vaccination efforts against SARS-CoV-2, understanding the clinico-epidemiological profile and post-acute sequelae of COVID-19 among vaccinated individuals is crucial for assessing vaccine effectiveness and identifying potential long-term health impacts. Methods: We conducted a retrospective cohort study. To investigate the clinico-epidemiological characteristics and post-acute sequelae of SARS-CoV-2 infection among vaccinated individuals. The study included vaccinated individuals who tested positive for SARS-CoV-2 during the past 3 years. Demographic, clinical, and vaccination data were extracted from electronic health records and public health databases.
Results: Data from 600 previously COVID infected samples were collected for the study purpose. The majority of the vaccinated population who contracted COVID-19 were in the 50-59 age group. Common symptoms at the time of infection included fatigue, joint pain, fever, breathing difficulty, cough, palpitations, sore throat, headache, loss of smell and taste, difficulty in concentrating and thinking, sleep disorder, depression, stress and anxiety. Notably, 97% of the vaccinated population experienced mild or asymptomatic disease, demonstrating the vaccine's effectiveness in preventing severe outcomes. Post-Acute Sequelae: 92% percentage of infected who reported post-acute sequelae of COVID-19, commonly referred to as "long COVID." The most frequently reported post-acute symptoms included fatigue, joint pain, fever, breathing difficulty, cough, palpitations, sore throat etc. affecting various organ systems. Majority individuals required medical attention for persistent post-acute sequelae, warranting further investigation and targeted interventions.
Conclusion: Study highlights the importance of monitoring post-acute sequelae of COVID-19 in vaccinated as well as non-vaccinated populations, despite the overall effectiveness of vaccines in preventing severe disease. The findings underscore the need for continued research to better understand the long-term health implications of SARS-CoV-2 infection among vaccinated individuals. These insights will inform public health strategies, clinical management, and ongoing efforts to protect population health in the context of the COVID-19 pandemic.
Keywords: COVID-19, SARS-CoV-2, vaccination, post-acute sequelae.

APSECON/2025/PPH/OP01

Assessment of patient perceptions towards chronic disease in a tertiary care hospital

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Abstract

Introduction: Chronic diseases are generally considered physical or mental conditions that last more than three months and require ongoing care. Perception of illness is a patient's cognitive appraisal and personal understanding of a medical condition and its potential consequences. One of the objectives of the study is to develop and implement a strategy to improve patient's perception towards chronic disease.

Method: A prospective observational study was conducted at the ambulatory setting of a tertiary care hospital in Mysuru for a period of 6 months amongst patients diagnosed with Hypertension, Diabetes Mellitus and Rheumatoid Arthritis. An extensive literature search was conducted from search engines for the development of a strategy to improve patient's perception. After identifying different problems faced by the patient, bookmarks and seals were developed to address these problems. The bookmarks contain disease-related information such as the definition, complications, lifestyle modifications and list of commonly prescribed medications for the particular which were made both in english and kannada. The information was presented in simple terms so that the patient could easily understand. The developed seals were printed with signs such as morning, afternoon, night, before food and after food to help patients understand when to take their medications. Each aspect of the bookmark was counselled and handed over to the patient, who can later use them for further reference. In addition, the seals were stamped on the bookmarks to indicate when to take the medications.

Results: The bookmarks were handed out to 60 patients by counselling out of which 53.33%(32) were females and 46.66%(28) were males. The patients were grouped as follows: 30% were hypertension, 15% were diabetes, 15% were rheumatoid arthritis, 30% were both hypertension and diabetes, 1.6% were both hypertension and rheumatoid arthritis, and 1.6% were both hypertension and rheumatoid arthritis.

Conclusion: The newly developed bookmarks and seals were useful in improving patient's perception of chronic disease because of it's ease of use and descriptive information.

Key words: Hypertension, Diabetes, Rheumatoid arthritis, medication, bookmarks, seats

APSECON/2025/PPH/OP02

Vancomycin flushing syndrome (red man syndrome) in 2-month-old infant: A case report

Jyoti Hawaldar and S M. Biradar

Abstract

Vancomycin flushing syndrome (VFS), previously referred to as Red Man Syndrome, is a non-IgE-mediated hypersensitivity reaction often associated with the rapid infusion of vancomycin. Characterized by a pruritic, erythematous rash predominantly affecting the face, neck, and upper torso, VFS may also present with systemic symptoms such as tachycardia and tachypnea. While rapid infusion rates are a common precipitant, VFS can occur even with slower infusion rates or after several days of treatment. This reaction is thought to result from vancomycin-induced degranulation of mast cells and basophils, leading to histamine release.

We report the case of a 2-month-old male with bronchiolitis who developed an erythematous rash, flushing of the face and chest, tachycardia, and tachypnea on the third day of vancomycin therapy. Based on clinical presentation, VFS was diagnosed. Immediate cessation of the infusion led to symptom resolution.

Result: Literature emphasizes the importance of slower infusion rates and premedication with antihistamines to mitigate this reaction in at-risk populations.

Keywords: Vancomycin flushing syndrome; Hypersensitivity reaction; Histamine release; Infusion rate

APSECON/2025/PPH/EP03

Isolation and identification of bacteria from different environment of a hospital

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Abstract

Objective: This study aimed to isolate and identify microorganisms from various hospital environments, assessing bacterial load, diversity and prevalence across different wards.

Methodology: A total of 08 samples were collected aseptically from surfaces in four wards of a tertiary care hospital, including causality, special ward, general war and laboratory. Samples were inoculated on nutrient agar, incubated at 37°C for 18–24 hours and analyzed for bacterial load using colony counting, expressed as cfu/cm². The mean bacterial load across wards was 10.12 cfu/cm², exceeding the acceptable limit of <5 cfu/cm². The highest bacterial load was observed in

Results: Biochemical tests, including gram staining, motility, lactose fermentation and assays for indole, methyl red, Voges-Proskauer, citrate, catalase and oxidase, were used for bacterial identification. Among 12 isolates, four bacterial species were identified, with *Escherichia coli* being the most prevalent, followed by *Pseudomonas spp.* and *Streptococcus spp*. . The presence of these bacteria may be due to inadequate sanitation, shared equipment and poor disinfection practices

Conclusion: The findings highlight a significant microbial presence in hospital wards, posing risks of hospital-acquired infections. Immediate actions, including enhanced sanitation, regular microbial monitoring risk assessments, are essential to mitigate these risks. Future research should focus on evaluating intervention strategies to improve hospital hygiene and reduce microbial contamination.

Key words: Biochemical tests**,** Motility**,** Microorganisms.

APSECON/2025/PPH/OP03

Assess the knowledge, attitude and practice of emergency contraceptives among reproductive-aged women

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Abstract

Background: When used properly, emergency contraception is a safe and cost-effective method for preventing unwanted pregnancies. It refers to contraceptive methods designed to prevent pregnancy after unprotected sexual intercourse. Emergency contraception plays a crucial role in reducing maternal and perinatal morbidity and mortality, which is particularly significant in our country due to concerns about unsafe abortions and population control. For it to be effective, the general public must be well-informed about contraception and adopt a positive attitude toward its use. Therefore, this study was conducted to assess the knowledge and practices related to emergency contraception among women of reproductive age.

Materials and Methods: The study was carried out with 103 women aged 18 to 45 years at the Gynaecology and Obstetrics Department of Shri B M Patil Medical College Hospital and Research Centre, Vijayapura. Sociodemographic information was collected and participants were asked about their knowledge, attitudes and practices regarding emergency contraception. The results were then analyzed.

Results: Knowledge, attitudes and practices regarding emergency contraception were found to be generally low, with a significant portion (58.3%) demonstrating poor knowledge, 35% exhibiting moderate knowledge and only 6.8% showing good knowledge. A significant relationship ($p<0.05$) was observed between literacy levels and knowledge, while other sociodemographic factors were not statistically significant ($p>0.05$). The relationship between sociodemographic factors, attitudes, knowledge levels and practices was also found to be non-significant ($p>0.05$). Furthermore, 88.3% of participants were unaware of the potential side effects of emergency contraception with only 11.7% having limited knowledge. Knowledge of emergency contraception was significantly influenced by factors such as family structure (nuclear family) and marital status ($p<0.05$). However, no significant correlation was found between knowledge levels and practices ($p>0.05$).

In conclusion, to reduce maternal and perinatal morbidity and mortality, it is essential to educate women so they can make informed decisions, maintain a positive outlook, and adopt effective practices regarding emergency contraception.

Key words: Emergency Contraceptives; Knowledge; Attitude; Practice; Reproductive women.

APSECON/2025/PPH/EP04

JC virus causing progressive multifocal leukoencephalopathy and unmasking immune reconstitution inflammatory syndrome (IRIS).

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Abstract

Introduction: Progressive Multifocal Leukoencephalopathy is a rare and late manifestation of HIV caused by JC virus infection. It is a demyelinating disease which usually affects the white matter in which infection of astrocytes and oligodendrocyte occurs in forms of lysis. Because of the early ART, Unmasking Immune Reconstitution Inflammatory Syndrome (IRIS) is an appearance of symptoms related to a latent opportunistic infection, which was not previously apparent. The purpose of this study is to provide insights into managing cases where both PML and IRIS are present.

Case description: A 37 years old male patient presented to the hospital with the complaints of slurred speech, leg pain, loss of vision since4 days with a CD4+ count of 42 cells. He has been on ART since last 8 years but for the past 2 years, he lost to follow up and stopped taking his medication. He was hospitalized multiple times due to systemic recurring symptoms. Further diagnostic evaluation shown-USG abdomen-pelvis showed no sonological abnormalities seen, UGI endoscopy was normal, *Mycobacterium tuberculosis* DNA PCR (GeneXpert) was negative for mycobacterium tuberculosis complex and Toxoplasma-IgM was non-reactive. MRI brain with contrast shown multifocal non enhancing areas of T2 FLAIR hyperintense signal changes/ lesions with mild to moderate perilesional edema involving bilateral nuclei (R>L), thalami, left deep cerebellum, right parieto-occipital white matter and bilateral middle cerebellar peduncles showing facilitate diffusion, this confirms features showing Progressive Multifocal Leukoencephalopathy.

Conclusion: In this case study, despite the patient being on ART for many years, non-adherence to treatment led to an elevated risk for opportunistic infections like PML. it is essential to develop comprehensive strategies to prevent and manage such cases. This includes close follow up and individualized treatment plans, which are necessary to balance adherence and immune reconstitution while preventing the exacerbation of the opportunistic infections and improving patient health outcomes.

Key words: Progressive Multifocal Leukoencephalopathy, UGI, *Mycobacterium tuberculosis.*

APSECON/2025/PPH/EP05

A prospective observational study of toxicity profile related to immune checkpoint inhibitors.

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Abstract

Background: The development of Immune-Checkpoint Inhibitors (ICIs) has signalled a new era in cancer treatment, enabling the possibility of prolong survival in patients with metastatic disease and providing new therapeutic indications in earlier-stage settings. The toxicity profiles of ICIs differ from the side effects of cytotoxic agents and come with new toxicities like immune-related adverse events. This study, we are making an attempt to access knowledge abouts irAEs.

Objective: To determine the safety and potential toxicity of Checkpoint Inhibitors (Immunotherapy). To analyse the causality, severity and preventability of ADEs associated with Checkpoint Inhibitors with Lung Cancer, GI Malignancy and Renal cell Cancer to determine the frequency and nature of ADEs associated with Checkpoint Inhibitors.

Method: All relevant details of the enrolled patients were obtained from the data sources and documented in the Data The patients were interviewed to gather toxicity information due to ICIs which were documented using Immune-related adverse events (irAEs) Grading was used as per ASCO guidelines.

Result: A total of 78 study participants, Majority of the patients in the study were males (64.1%) when compared to females (35.9%). The most common irAEs observed were cutaneous toxicities (n=6.4%), Fatigue (n=16.7%), Musculoskeletal toxicities (n=2.6%), GI toxicities (n=5.1%).

Conclusion: In this study, irAEs are observed more with combination therapy that includes chemotherapy drugs compared to monotherapy with immune checkpoint inhibitors. After evaluating the data, immunotherapy was found to have a better safety profile than combination therapy, which includes chemotherapy medications.

Keywords: ICIs, Toxicity Grading, Immune Related Adverse Events (irAEs).

APSECON/2025/PPH/EP06

Quantitative analysis of cognitive enhancement via brain signal dynamics: Pre- and post-mantra chanting evaluation.

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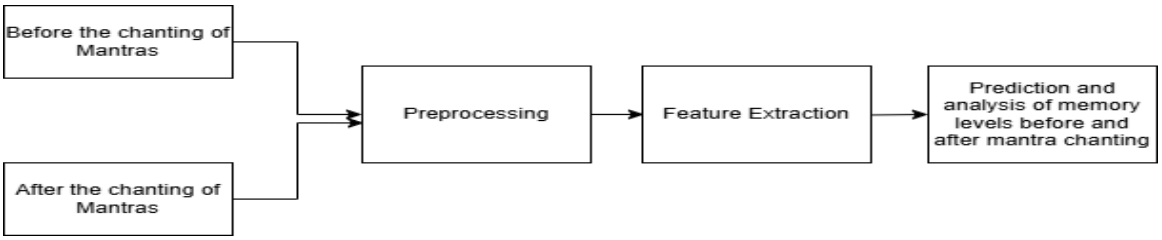
Graphical Abstract



Abstract

Mantra chanting has been historically recognized for its positive impact on mental health and cognitive performance. This study investigates the effect of mantra chanting on brain function improvement through a comprehensive analysis of electroencephalogram (EEG) signals. Employing advanced equipment such as Starstim, NIRS (Near-Infrared Spectroscopy), BIOPAC and CANTAB, we analysed EEG signal dynamics to explore pre- and post-chanting cognitive changes. Preprocessing techniques were applied to eliminate noise and artifacts, followed by feature extraction methods to identify significant EEG components corresponding to neural activities.

Statistical analysis demonstrated a measurable improvement in brain function after mantra chanting. Key metrics, including changes in alpha and theta power, indicated enhanced memory retention and relaxation levels. The use of deep learning models for EEG component classification achieved an accuracy of 93.8%, highlighting the robustness of the analysis framework. Results showed a consistent improvement in short-term memory and cognitive flexibility post-chanting, aligning with psychological and neurophysiological benefits previously observed in related studies.

The study underscores the potential of integrating EEG analysis and advanced equipment for validating the cognitive and neurological impact of traditional practices like mantra chanting. This research opens pathways for therapeutic applications and demonstrates the relevance of combining technology and traditional interventions for brain health enhancement. Future work will focus on expanding participant diversity and exploring the long-term effects of chanting on various cognitive parameters.

Keywords: Mantra Chanting, EEG Signal Analysis, Cognitive Enhancement.

APSECON/2025/PPH/EP07

EEG-based signal analysis for early detection and classification of dementia: A statistical approach

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Abstract

Dementia is the clinical syndrome characterized by acquired losses of cognitive and emotional abilities severe enough to interfere with daily functioning and the quality of life. This study focuses on leveraging Electroencephalogram (EEG) signals to analyze and classify dementia stages, including Mild Cognitive Impairment (MCI) and Alzheimer's Disease (AD), using statistical and machine learning techniques.

EEG data were collected using advanced systems like Starstim and fNIRS Biopac, followed by preprocessing to remove noise and artifacts. Principal Component Analysis (PCA) was applied for feature extraction, simplifying data while preserving essential information. A Convolutional Neural Network (CNN) was then developed to classify dementia stages based on extracted EEG features.

The results demonstrate that EEG signals effectively differentiate between dementia conditions. Statistical analysis revealed significant differences in power spectral density and coherence between healthy controls and MCI/AD patients. The CNN model achieved a classification accuracy of 92%, outperforming traditional approaches. Early detection of MCI was facilitated by analyzing EEG rhythms during working memory tasks, indicating its potential as a diagnostic tool.

This study emphasizes EEG's advantages as a non-invasive, cost-effective and high-temporal-resolution method for dementia diagnosis. The findings highlight the utility of integrating EEG with neuropsychological assessments to improve diagnostic precision.
In conclusion, the proposed approach offers a reliable and scalable solution for early detection and classification of dementia. Future research will focus on enhancing these methodologies with longitudinal data and larger, diverse populations to further refine the diagnostic process and expand its clinical applicability.

Keywords: Dementia, Mild Cognitive Impairment (MCI), Alzheimer's Disease (AD), Electroencephalogram (EEG), Principal Component Analysis (PCA), Convolutional Neural Network (CNN), EEG feature extraction.

APSECON/2025/PPH/EP08

HER2 positive and triple negative breast cancer: A review

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Abstract

Background Information: Cancer is the most common cause of mortality and morbidity seen in all over the world. Breast Cancer is the second most prevalent type of non-skin cancer and the fifth most common cause of cancer-related mortality worldwide, accounting for 10.4% of all cancer incidences among women. HER2 is a protein that plays a role in cell growth and differentiation accounts for 15-20% of HER2-Positive Breast Cancer. Lack of expression of Estrogen & Progesterone Receptor and the absence of Human Epidermal Growth Factor Receptor 2 (HER2) and accounts for 15% of Triple Negative Breast Cancer of all cases.

Objectives: Improving the prognosis of Overall Survival (OS) and Disease-Free Survival (DFS) of HER2-Positive and Triple Negative Breast Cancer. Reducing the risk of recurrence through effective Adjuvant Chemotherapy. Balancing the treatment efficacy with minimal side effects and improving overall quality of life.

Methods: Relevant articles from various journals were analyzed and reviewed.

Conclusion: Advanced targeted therapies have improved the treatment and prognosis of HER2-Positive and Triple Negative Breast Cancer.

Keywords: Breast Cancer, HER2 Positive, TNBC, Chemotherapy, NACT.

APSECON/2025/PPH/OP04

A prospective observational study on pathological complete response in HER2 positive and triple negative breast cancer.

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Abstract

Background Information: Pathologic Complete Response (pCR) is considered a prognostic indicator in breast cancer, especially for HER2-positive and Triple Negative Breast Cancer (TNBC) subtypes. Achieving pCR after Neoadjuvant Chemotherapy (NACT) is associated with improved long-term outcomes, including Overall Survival (OS) and Disease-Free Survival (DFS).

Objectives: The Core Concept to study the pCR, which indicates the disappearance of all invasive breast cancer after the completion of NACT & Axillary node removal of any residual. **Methods:** A prospective observational study of patients achieving pCR in HER2+ve and TNBC was carried out in Medical Oncology Department, Bharath Hospitals and Institute of Oncology, Mysuru for 6 months. After taking the consent, the patients were interviewed to gather pCR in HER2+ve and TNBC, which were then analysed by using Immunohistochemistry report, Grading, Breast Cancer Staging System, BI-RADS Category and Histopathology Report. All details are analysed and recorded.

Results: Our study included 106 study population they were diagnosed with HER2+ve and TNBC, in that (30.18%) were attained the pCR. Out of this (56.3%) were HER2+ve Breast Cancer Patients and (43.8%) were TNBC patients who attained pCR. On analyzing, patients received post NACT, in that pCR achieved in HER2+ve patients (46.15%) and TNBC patients (35.89%) were observed. On average, (41.02%) shows the pCR.

Conclusion: Achieving pCR has been associated with improved long-term outcomes, including higher OS and DFS, particularly in these aggressive forms of breast cancer. Advanced targeted therapies have improved the treatment and prognosis of HER2-Positive and TNBC.

Keywords: Breast Cancer, HER2 Positive, TNBC, NACT, pCR.

APSECON/2025/PPH/OP05

Toxicity profile related to immune Checkpoint blockades

Snehashree K A, Prajwal B, Charan C S, Hanumanthachar Joshi
Sarada Vilas College of Pharmacy, Mysuru, Karnataka

Abstract

Background: The development of Immune-Checkpoint Inhibitors (ICIs) has signalled a new era in cancer treatment, enabling the possibility of prolong survival in patients with metastatic disease, and providing new therapeutic indications in earlier-stage settings. The toxicity profiles of ICIs differ from the side effects of cytotoxic agents and come with new toxicities like immune-related adverse events. This study, we are making an attempt to access knowledge abouts irAEs.

Objectives: To determine the Safety and Potential toxicity of Checkpoint Inhibitors (Immunotherapy). To analyse the causality, severity, and preventability of ADEs associated with Checkpoint Inhibitors with Lung Cancer, GI Malignancy and Renal cell Cancer, to determine the frequency and nature of ADEs associated with Checkpoint Inhibitors.

Methods. All relevant details of the enrolled patients were obtained from the data sources and documented in the Data The patients were interviewed to gather toxicity information due to ICIs which were documented using Immune-related adverse events (irAEs) Grading was used as per ASCO guidelines.

Results: A total of 78 study participants, Majority of the patients in the study were males (64.1%) when compared to females (35.9%). The most common irAEs observed were Cutaneous toxicities (n=6.4%), Fatigue (n=16.7%), Musculoskeletal toxicities (n=2.6%), GI toxicities (n=5.1%).

Conclusion: In this study, irAEs are observed more with combination therapy that includes chemotherapy drugs compared to monotherapy with immune checkpoint inhibitors. After evaluating the data, immunotherapy was found to have a better safety profile than combination therapy, which includes chemotherapy medications.

Keywords: ICIs, Toxicity Grading, Immune Related Adverse Events (irAEs).

APSECON/2025/PPH/EP09

A cross-sectional study on the prevalence of adverse drug reactions of sodium valproate used as a mood stabilizer in patients with bipolar affective disorder in a tertiary care hospital

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Abstract

Background information: Sodium valproate is a well-established anticonvulsant medication that has been repurposed for the management of mood disorders, particularly bipolar disorder. Like any medication, it can cause ADRs in some individuals. So through this study, we are making an attempt to access knowledge about ADRs.
Objectives: To determine the prevalence of ADRs and to analyse the causality, severity and preventability of ADRs associated with sodium valproate in BPAD patients.
Methods: A cross-sectional study of patients receiving sodium valproate for BPAD was carried out in Psychiatry OPD of Krishna Rajendra Hospital, Mysuru for a period of 6 months.After taking the consent the patients were interviewed to gather ADRs of sodium valproate, which were then recorded using the UKU SERS scale. ADRs associated were evaluated for causality, severity and preventability using Naranjo's Algorithm, Modified Hartwig and seigel scale and Modified Shumock and Thornton scale respectively and recorded.
Results: Our study included 142 study population. Male preponderance (65.49%) was observed .A total of 368 ADRs were identified using UKU-side effect rating scale among the study population. The most common ADRs observed were increased sleep (11.41%), weight gain (8.69%), sexual dysfunction (8.69%), headache (7.33%), tremors (6.25%) and photosensitivity (6.25%). Upon causality assessment, the majority of reactions were possible(69.57%).The majority of ADRs were assessed as mild(75.27%) and 94.29% of ADRs were definitely preventable. Prevalence of ADRs was found to be 85.91%.
Conclusion: ADRs are a frequent occurrence in patients with BPAD who are taking sodium valproate which is mild in most cases. Early detection and management can reduce the frequency of ADRs, increase compliance and enhance patient quality of life.
Keywords: Sodium valproate; BPAD; Adverse Drug Reactions.

APSECON/2025/PPH/OP06

Patient Safety- Global Challenges and Ethical Considerations

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Abstract

Patient safety is a critical focus within healthcare, emphasizing the prevention of harm to patients and the enhancement of care quality. Various studies and initiatives highlight the importance of cultivating a strong patient safety culture, implementing effective training programs and addressing systemic issues that contribute to medical errors. The systematic collection and analysis of data are vital for evaluating patient safety initiatives. This includes developing safety indicators, benchmarking performance and measuring outcomes to identify areas for improvement in patient care .Addressing universal challenges in patient safety requires international cooperation. Key areas include medication safety, infection control and ensuring equitable healthcare access across different regions .Ethical dilemmas play a crucial role in patient safety discussions, encompassing informed consent, resource allocation and decision-making processes that impact patient care.

Key words: Patient safety, Medical errors.

APSECON/2025/PPH/EP10

Assessment of patient reported adverse drug reactions and Quality of life in epileptic patients receiving polytherapy :A Hospital based study

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Abstract

Objectives: Aims to collect and assess the patient reported adverse drug reactions and quality of life in patients receiving anti-epileptic polytherapy.

Methods: A cross-sectional study was carried out in the Psychiatric Out Patients Department (OPD) of Krishna Rajendra Hospital, Mysuru. Patients who were above 18 years of age and willing to participate in the study, met with the specified inclusion criteria were included. The causality of reported ADRs and quality of life were assessedusingNaranjoalgorithmandQOLIE-10respectivelyandanalysed.

Results: In a study of 108 subjects, anti-epileptic ADRs were reported by males (50.52%) and females (49.48%). Naranjo scale classified 49% ADRs as probable, 51% as possible. Central nervous system was most affected. Mean quality of life score was 27.17±4.51; 57.4% had good quality of life. No association found in chi-square analysis forage, gender, or number of antiepileptics($p>0.05$).

Conclusion: Anti-epileptic polytherapy's adverse reactions impact mental health and patient quality of life. Rising prevalence underscores the need for vigilant monitoring and prompt reporting to healthcare providers, with clinical pharmacists playing a key role in fostering collaboration for successful epilepsy care.

Keywords: Antiepileptics; Polytherapy; Adverse drug reactions; Causality; Central nervous System; Quality of life; Clinical pharmacist

APSECON/2025/PPH/OOP01

Comparative study of chronic kidney disease

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Introduction:
Optimal management of patients with chronic kidney disease (CKD) requires appropriate interpretation and use of the markers and stages of CKD, early disease recognition, and collaboration between primary care physicians and nephrologists. Because multiple terms have been applied to chronic kidney disease (CKD), e.g., chronic renal insufficiency, chronic renal disease, and chronic renal failure.That are associated with abnormal renal function and progressive decline in glomerular filtration rate (GFR). This study aimed to investigate the associations of several behavioural and health-related factors with CKD. This term includes the continum of kidney dysfunction from mild kidney damage to kidney failure, and it also includes the term, end-stage renal disease (ESRD).

Objectives: Identify the early signs and symptoms of chronic kidney disease to facilitate prompt diagnosis and intervention. Implement evidence-based guidelines for managing chronic kidney disease, including lifestyle modifications, medication adjustments, and monitoring of disease progression. Select appropriate treatment options and renal replacement therapies based on individual patient needs and chronic kidney disease stage. Collaborate with an interprofessional team, including nephrologists, dietitians, nurses, and pharmacists, to provide comprehensive care for chronic kidney disease patients. The causes of CKD vary globally, with the most common primary diseases leading to CKD and, ultimately, end-stage renal disease (ESRD).

Conclusion: Chronic kidney disease (CKD) affects between 8% and 16% of the population worldwide and is often under recognized by patients and clinicians. Defined by a glomerular filtration rate (GFR) of less than 60 mL/min/1.73 m2, albuminuria of at least 30 mg per 24 hours, or markers of kidney damage persisting for more than 3 months, CKD is more prevalent in low- and middle-income than in high-income countries. Globally, CKD is most commonly attributed to diabetes and/or hypertension, but other causes such as glomerulonephritis, infection, and environmental exposures (such as air pollution, herbal remedies, and pesticides) are common in Asia, sub-Saharan Africa, and many developing countries. Genetic risk factors may also contribute to CKD risk. Chronic renal disease has an important impact on the morbidity and mortality of patients. The organization of the conservative treatment is crucial to slow the progression of kidney dysfunction, as well as to lessen the occurrence of complications, with a positive impact on the prognosis of the affected population. Another important aspect is the preparation for renal replacement treatment, which greatly facilitates the adaptation of patients to the chosen therapy.

Key Words: Chronic Kidney Disease, End Stage, Renal Failure, End stage renal disorder.

COMMUNITY PHARMACY

APSECON/2025/CP/EP01

Consequences of disturbance in sleep-wake cycle

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Abstract

Introduction: The sleep-wake cycle is a fundamental aspect of human physiology, regulating various biological processes. Disturbances in this cycle can lead to significant health consequences, ranging from physical ailments to psychological disorders. Such disruptions are increasingly prevalent in modern society due to irregular work schedules, excessive screen time, and stress. This essay explores the causes, diagnosis, and treatment of sleep-wake cycle disturbances.

Methodology: Understanding the consequences of sleep-wake disturbances involves examining clinical studies, patient histories, and experimental data. Researchers commonly use tools such as polysomnography, actigraphy, and self-reported sleep diaries to investigate sleep patterns. Studies often focus on populations like shift workers, students, and individuals with chronic illnesses to evaluate the impact of disrupted sleep cycles on physical and mental health.

Diagnosis: The diagnosis of sleep-wake cycle disturbances typically involves both subjective and objective assessments. Patients often report symptoms such as excessive daytime sleepiness, insomnia, or irregular sleep patterns. Medical practitioners utilize diagnostic tools like polysomnography, which monitors brain activity, eye movements, and heart rate during sleep. Additionally, wearable devices and sleep-tracking apps are becoming increasingly popular for real-time monitoring.

Treatment: Treating disturbances in the sleep-wake cycle requires a multifaceted approach. Behavioral interventions, such as maintaining a consistent sleep schedule and practicing good sleep hygiene, are foundational. Pharmacological options, including melatonin supplements and sedatives, may be prescribed in severe cases. Cognitive-behavioral therapy for insomnia (CBT-I) has shown efficacy in addressing underlying psychological factors. Light therapy and exposure to natural sunlight are also effective in realigning the circadian rhythm.

In conclusion, disturbances in the sleep-wake cycle can severely impact health and well-being. Through effective diagnosis and treatment, individuals can restore their sleep patterns and improve their quality of life.

Keywords: Sleep wake cycle, Physiological disorders, sleep hygiene, Insomnia, Light therapy, Natural sunlight.

APSECON/2025/CP/EP02

Unveiling adverse effects of sex hormone therapy in gender minority individuals

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Abstract

Introduction: Sex hormone therapy is a critical component of gender-affirming care for many transgender and gender-diverse individuals. While it provides significant psychological and physical benefits, including improved quality of life and gender congruence,

Gender-affirming hormonal therapy in transgender individuals can lead to several adverse effects. Testosterone use in transgender men has been linked to cardiovascular events such as pulmonary embolism. On the other hand, anti-androgens and estrogens in transgender women have been associated with meningiomas and cardiovascular issues.

Objectives: To estimate the adverse effects of Sex Hormone Therapy, to enhance education and training on the potential risks and benefits of sex hormonal therapy for gender minority individuals, and informed decision-making processes, to foster collaboration between researchers, healthcare professionals, advocacy organizations and gender minority communities to address knowledge gaps, promote evidence-based practices and advocate for equitable access to gender-affirming care.

Need For Study: Understanding the potential adverse effects of sex hormonal therapy is essential for the health and wellbeing of gender minority individuals, hormonal therapy is often a crucial aspect of gender affirming care and have significant impacts on physical and mental health, Gender minority individuals deserve access to accurate information about the risks and benefits of hormonal therapy to make informed decisions about their medical care.

Conclusion: Advances in medical research may lead to more personalized hormone therapy regimens based on factors such as genetics, hormone levels and individual response, optimizing outcomes while minimizing risks and side effects. Monitoring long term effects may lead to prevention of References potential health risks like decreased Bone Mineral Density, Cardiovascular events etc. These results may lead to development of alternative hormone delivering systems like transdermal patches and long-acting injections based on individual preferences

Keywords: Sex hormone therapy, Gender minority , Adverse effects , Gender-Affirming care, Transgender.

PHARMACEUTICAL CARE & PUBLIC HEALTH

APSECON/2025/PCPH/EP01

Prospective studies matter for paracetamol drug toxicity during the COVID-19 pandemic

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Abstract

During the COVID-19 pandemic situation,the gap in public awareness regarding the potential toxicity of Paracetamol was significicantly highlighted,which was widely used as over-the-counter(OTC) medication.

Many indivisuals had relied on the self-medication of Paracetamol to manage fever and pain and are unaware of the risks associated with the excessive doses. Paracetamol overdose,whether caused intentionally or by accident can lead to severe complications including liver damage,emphasizing the need for educating the public on its safe use.Prospective studies are crucial to understand the patterns and to prevent misuse,especially during the health crises.

The drug availability of the Paracetamol as an OTC medication had possesed the challenges,as this ease the acess that increases the unsupervised use,especially during the pandemic situation.Many of the patients had consumed Paracetamol in higher doses than recommended,that are taken often combining with other medications containing the same ingredients.The lack of awareness contributed to a rise in cases of the acute liver disorders,overwhelming healthcare systems.This studies would help in identifying the risk factors and trends for guiding the regulatory decisions and public health policies.

Conclusion: Patient counseling is crucial in mitigating the risks of paracetamol toxicity. Healthcare providers must educate patients on appropriate dosages, potential drug interactions, and overdose warning signs.In conclusion, enhancing awareness of paracetamol toxicity through education and effective patient counseling can significantly reduce adverse effects, safeguarding public health, especially during emergencies like pandemics.

Key words: Drug toxicity, paracetamol, OTC, over dose, patient counselling.

APSECON/2025/PCPH/EP02

Hydrogel: Review

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Abstract

Hydrogels are three-dimensional, cross-linked polymer networks that have attracted considerable attention across various fields due to their distinctive properties, including high water retention, biocompatibility and adaptability in drug delivery systems. This review offers a comprehensive overview of the preparation, characterization and diverse applications of hydrogels. It details synthesis methods, focusing on both physical and chemical crosslinking techniques. The review further examines the extensive applications of hydrogels, particularly in biomedical areas such as wound healing, drug delivery (oral, transdermal, ocular and rectal), gene delivery and tissue engineering. Additionally, it discusses non-biomedical uses, including water purification, plant irrigation systems, and cosmetics. The potential challenges related to environmental issues and material stability are also addressed, along with future perspectives on hydrogel technology. With ongoing advancements in hydrogel research, these materials continue to demonstrate significant promise for innovative therapeutic and industrial applications, providing a foundation for developing novel, effective and sustainable solutions.

Keywords: Hydrogel; pH; drug delivery; wound healing

APSECON/2025/PCPH/EP03

Mpox awareness: protect yourself and your community

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Abstract

Background: Monkeypox is a Zoonotic infectious disease that mainly spreads from animals to human. It is caused by Mpox virus that belongs to Genus Orthopoxvirus which is genetically related to smallpox.The first human case was reported in 1970 in Democratic Republic of Congo. It mainly transmits through direct contact with infectious skin and respiratory droplets where Sexual contact is the key mode. Clinical presentation includes headache, fever, myalgia, swollen lymph nodes, skin lesions and backache. As there is no specific treatment, Antivirals like Tecovirimat, Brincidofovir, Cidofovir, Trifluridine and IV Vaccinia Immunoglobulin can be used as vaccination.

Objectives: The study aims in raising awareness about the etio-transmission, clinical presentation, treatment and prevention.

Methodology: The data was browsed in the articles such as Google scholar, etio-transmission was searched in WHO clinical management, treatment and prevention in Drugs 82 and Science direct databases.

Results: The lack of awareness towards Mpox infection has lead to increased risk of spreading as WHO proclaimed the Mpox infection as a Public Health Emergency in August 2024 after the outbreak in Africa in 2022 as the cases has significantly elevated regionally and extended to nearby countries in East and Central Africa. Therefore, its crucial to be aware of the severity of disease and transmission.

Conclusion: The review enhances the understanding of preventative and therapeutic outlook of disease. Education regarding the infection must be made accessible globally. Besides, the effects of virus can also be minimized by taking proper precautions and timely detection.

Key words: Monkey pox, Orthopoxvirus, Zoonotic, Vaccination, Antiviral therapy, Outbreak, Africa

APSECON/2025/PCPH/EP04

Current and emerging treatment strategies for human metapneumovirus (HMPV) infection.

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Abstract

Human Metapneumovirus (HMPV) is a respiratory virus that primarily affects young children, the elderly and immunocompromised individuals, causing symptoms similar to those of influenza and respiratory syncytial virus (RSV). As a member of the Paramyxoviridae family, HMPV can lead to significant respiratory illness, especially in vulnerable populations. Currently, there is no specific antiviral treatment for HMPV and management focuses on supportive care, including hydration, oxygen therapy, fever management and, in severe cases, mechanical ventilation. Investigational antiviral therapies such as ribavirin and monoclonal antibodies are being explored, though evidence supporting their efficacy remains limited. Secondary bacterial infections, such as pneumonia, may require antibiotic therapy. Research into immunotherapy, including human immunoglobulin and cytokine modulation, shows promise but remains in the experimental stage. Although no vaccine is currently available for HMPV, ongoing studies are investigating vaccine development and strategies to enhance immune responses. Preventive measures such as good hygiene and avoiding close contact with infected individuals are essential in reducing transmission.

Future directions in treatment include the development of targeted therapies, such as small molecule inhibitors and RNA-based treatments, inspired by advancements in other viral infections like COVID-19. While supportive care remains the cornerstone of treatment, researchers are optimistic that emerging antiviral drugs and vaccines will provide more effective solutions for managing HMPV infections in the future.

Keywords: Human Metapneumovirus**,** Viral pneumonia, Bronchiolitis, Respiratory diseases.

APSECON/2025/PCPH/EP05

High-Risk complications in infertility treatments: Understanding and management

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Abstract

Infertility treatments, including in vitro fertilization (IVF), intrauterine insemination (IUI), ovulation inductio, and other assisted reproductive technologies (ART), have become essential tools for many couples struggling with infertility. While these treatments offer significant hope for achieving pregnancy, they also carry certain high-risk complications that can impact both maternal and fetal health. This paper outlines arising from invasive procedures. Additionally, emotional and psychological challenges, long-term effects of hormonal medication and risks like blood clots and infection are discussed. Understanding these risks and maintaining close communication with healthcare providers is crucial for ensuring safe and effective treatment outcomes. Early intervention and comprehensive care, including psychological support, are vital for minimizing the potential impact of these high-risk effects on both the individual and their family.

Keywords: Multiple pregnancies, Ectopic pregnancy, Ovarian cancer risk, Intrauterine insemination, Ovulation induction

APSECON/2025/PCPH/EP06

Advancements in myocardial infarction treatment: emerging drug therapies

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Abstract

Myocardial infarction (MI) remains one of the leading causes of mortality worldwide and while conventional treatments have significantly improved patient outcomes, novel drug therapies are emerging with the potential to further enhance recovery and reduce complications. This paper explores recent advances in pharmaceutical interventions for MI, focusing on new agents that target specific molecular pathways involved in myocardial injury, inflammation and tissue repair. Key drug classes discussed include PCSK9 inhibitors, SGLT2 inhibitors, anti-inflammatory therapies such as ziltivekimab, omega-3 fatty acids like icosapent ethyl and angiotensin receptor-neprilysin inhibitors. Additionally, novel antiplatelet agents, metabolic modulators and direct factor Xa inhibitors are reviewed for their roles in improving clinical outcomes post-MI. Collectively, these therapies offer promising potential to reduce recurrence, mitigate ischemic damage and improve long-term survival, marking a significant evolution in the management of MI. Continued research is essential to refine treatment strategies and optimize personalized care for MI patients.

Keywords: MI, Novel Drug Therapies, PCSK9 Inhibitors, SGLT2 Inhibitors, Ziltivekimab, Icosapent Ethyl

APSECON/2025/PCPH/EP07

Rare but severe complications of bariatric surgery: risks, management and long- term considerations

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Abstract

Bariatric surgery, a widely used and effective treatment for obesity, significantly aids in weight loss and reduces the risk of obesity-related conditions like diabetes, hypertension and heart disease. However, like any major surgery, it carries potential risks and complications, some of which are rare but severe. This paper discusses the rare but serious effects of bariatric surgery, including anastomotic leaks, gastric dilatation, nutrient deficiencies, dumping syndrome, internal bleeding, deep vein thrombosis, bowel obstruction, surgical site infections, gastric ulcers and psychological effects. These complications, though uncommon, can have life-threatening consequences if not promptly addressed. Management strategies, including surgical intervention, nutritional supplementation, psychological support and medical monitoring, are essential for minimizing these risks and ensuring long-term success. Understanding the potential risks and working closely with healthcare providers is crucial for patients considering bariatric surgery to achieve optimal outcomes and mitigate the severity of rare complications.

Keywords: Bariatric surgery, Weight-loss surgery, Obesity treatment, Anastomotic leaks, Gastric dilatation

APSECON/2025/PCPH/EP08

Drug-induced exacerbation of congestive heart failure: mechanisms, risks and management strategies

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Abstract

Congestive heart failure (CHF) is a complex and progressive condition that can be exacerbated or induced by certain medications, particularly in individuals with pre-existing heart conditions or comorbidities. This paper reviews various drug classes and specific agents that have the potential to induce or worsen CHF, focusing on their mechanisms of action and clinical implications. Key drug classes discussed include nonsteroidal anti-inflammatory drugs (NSAIDs), calcium channel blockers (CCBs), thiazolidinediones (TZDs), corticosteroids, antiarrhythmic drugs, chemotherapy agents and sympathomimetic drugs. Additionally, the potential for fluid retention, increased cardiac workload and direct myocardial toxicity is explored in the context of these therapies. Medications such as SGLT2 inhibitors and beta-blockers, while beneficial in heart failure management, can also pose risks when not carefully monitored. This paper highlights the importance of cautious prescribing and close monitoring to mitigate the risks associated with these drugs in CHF patients. Tailored therapeutic approaches and proactive management strategies are essential to minimize drug-induced exacerbations of CHF and optimize patient outcomes.

Keywords: Congestive Heart Failure, Drug-induced heart failure, Fluid retention, Cardiac workload, Cardiomyopathy.

APSECON/2025/PCPH/EP09

Exploring gel-based topical treatments for skin cancer, safety & efficacy: A review

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Abstract

Skin cancer, encompassing various forms, is the most prevalent type of cancer globally. Topical chemotherapy presents an appealing treatment option due to its ease of application and non-invasive nature. However, delivering antineoplastic agents through the skin is challenging due to their physicochemical properties such as solubility, ionization, molecular weight and melting point as well as the barrier function of the stratum corneum. This systematic review identifies the most commonly employed techniques for topical drug delivery using gel-based formulations in skin cancer treatment. It briefly discusses the excipients utilized, preparation methods and gel characterization techniques. Safety considerations are also addressed. Topical formulations, particularly gels, are designed to provide both systemic and local therapeutic effects when applied to the skin. These semisolid preparations consist of drugs dispersed in a liquid medium, which enhances drug delivery efficiency. Additionally, the review explores the combinatorial formulation of Nano carrier-loaded gels aimed at enhancing drug delivery characteristics. Limitations and challenges of the identified strategies are outlined, providing insight into future directions for topical chemotherapy.

Keywords: Skin cancer, Physical hydrogel, Chemical hydrogel, Composite gel, Topical gel.

APSECON/2025/PCPH/EP10

Cocrystallization, a promising strategy for enhancing solubility of poorly soluble drugs: A review

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Abstract

The production of novel medicinal products with exceptional pharmacological and physical characteristics, including solubility, stability, dissolving rates and bioavailability, is made possible by the cocrystallization of therapeutic ingredients. The reasons this highly relevant field is relevant to pharmaceutical formulation, the definitions and applications of cocrystals, the preparation and characterisation of cocrystals, a comparison of various (traditional and innovative) cocrystal formation techniques, and the implications for regulatory control and intellectual property protection are all covered in this brief review. Cocrystals may traditionally be made using the solvent evaporation process. but every method has its limitations for certain conditions. The current trend for cocrystal formation uses sophisticated methods such as the hot melt extrusion method, spray-drying method, in addition to overcoming the drawbacks of conventional cocrystallization techniques, the goal of developing a novel approach is to provide a continuous process with simplified stages for producing the cocrystal product. An overview of the various techniques for producing pharmaceutical cocrystals and assessing them is given in this article. This article also discusses the potential effects of the emerging field of cocrystallization on the intellectual property environment in the pharmaceutical industry.

Keywords: Pharmaceutical cocrystals (PC); Cocrystallization; Active pharmaceutical Ingredient (API); Generally Recognized As Safe (GRAS); Cocrystal Former (CF); Novel methods; Traditional methods

APSECON/2025/PCPH/EP11

Standardization and formulation of *Phyllanthus acidus* (L) lehya

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Abstract

The star gooseberry, scientifically known as *Phyllanthus acidus* (L) and belonging to the Euphorbiaceae, is a tropical fruit tree that bears small, delicious yellow berries. It goes by various names, including starberry, West Indian gooseberry, country gooseberry, Malay gooseberry, or simply gooseberry tree. To highlight the potential therapeutics role of *Phyllanthus acidus* (L) (star gooseberry) in trending various disease like inflammatory conditions, bronchitis, asthma and respiratory disorders, several chemical tests have been conducted to identify the plants phytoconstituents. By using this fruits powder we are preparing a lehya. Lehya is one of the ayurvedic formulation which is in semi-solid consistency. This *Phyllanthus acidus* (L) Lehya helps has anti-inflammatory, antioxidant and anti-diabetics properties which helps to treat diabetes and to boost immunity. It helps in relieves stress and anxiety and makes mind mentally strong and active.

Keywords: Star gooseberry, Lehya, anti-diabetics, *Phyllanthus acidus* (L).

APSECON/2025/PCPH/EP12

Insights into transdermal systems and their benefits: A review

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Abstract

Transdermal drug delivery systems (TDDS), or patches, are designed to administer drugs through the skin for systemic effects. They enhance patient compliance by avoiding first-pass metabolism, providing controlled and continuous drug release and minimizing side effects. This innovative, painless method improves therapeutic efficiency and is increasingly favoured over traditional dosage forms. Transdermal drug delivery systems (TDDS) operate by applying a drug within a patch that adheres to the skin for extended periods, ensuring a steady concentration in the bloodstream. Key components include a polymer matrix, drug, and permeation enhancers, with polymers ranging from natural options like Gelatin and Chitosan to synthetic types such as Polybutadiene and Polyvinyl chloride. Various TDDS types exist, including single-layer and multi-layer systems. This review provides an overview of the principles of transdermal permeation, the components of transdermal patches, different types of transdermal patches, their advantages and the evaluation methods for transdermal systems.

Keywords: Transdermal patch, transdermal drug delivery, polymer matrix, benefits, types.

APSECON/2025/PCPH/EP13

A review on enhancing drug delivery with nanospheres: Biodegradable materials and targeting innovations

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Abstract

Nanospheres are particles that range in size from 10 to 200 nm in diameter and can exist in either amorphous or crystalline forms. They serve a crucial role in drug delivery by protecting drugs from enzymatic and chemical degradation. The hydrophobic surfaces of these particles are particularly vulnerable to opsonization, leading to their clearance by the reticuloendothelial system (RES).

In drug delivery systems, the term "vesicles" refers to the tiny capsules that store drugs, while "nanospheres" denote the solid structural framework. Biodegradable variants of nanospheres include albumin, modified starch, gelatine, polypropylene dextran, and polylactic acid nanospheres. Additionally, there are two specialized types: immuno-nanospheres and magnetic nanospheres. By combining these two types, immuno-magnetic nanospheres can be created, significantly enhancing targeting capabilities.

This review explores targeting strategies for nanospheres employed for various applications, such as ensuring prolonged circulation and facilitating drug delivery specifically to tumours or the brain. Various methods exist for preparing these nanospheres, with a notable focus on utilizing nanotechnology for Drug targeting effectively.

Keywords: Nanospheres, RES, Drug targeting, Drug delivery.

APSECON/2025/PCPH/EP14

A review on Ethosomes: An innovative method to enhanced transdermal drug delivery.

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Abstract

Ethosomes are advanced lipid-based carriers specifically designed to enhance the efficiency of transdermal and dermal drug delivery. Comprised mainly of phospholipids, ethanol and water, they exhibit unique properties that allow for deeper penetration of active pharmaceutical ingredients into skin layers, thereby facilitating systemic absorption. Ethanol plays a pivotal role as a penetration enhancer by increasing the fluidity of skin lipids and creating new pathways for drug transport. Compared to conventional liposomes, ethosomes offer superior stability, higher drug entrapment efficiency and smaller vesicle sizes, making them suitable for delivering both hydrophilic and lipophilic drugs. This review article explores the composition, preparation techniques, and characterization methods of ethosomes, as well as their mechanisms of action in drug delivery and potential therapeutic applications. It highlights the advantages of ethosomes over other vesicular carriers, particularly their effectiveness in delivering drugs under both occlusive and non-occlusive conditions. Additionally, the article delves into recent advancements in ethosomal technology.

Keywords: Ethosomes, Ethanol, Vesicular carrier, Transdermal, Phospholipid

APSECON/2025/PCPH/EP15

Formulation and application of polymeric matrices for sustained-release tablets: A review

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Abstract

A significant development in drug delivery methods, sustained-release matrix tablets provide a regulated and extended release of active pharmaceutical ingredients (APIs). By sustaining steady plasma drug levels over an extended period of time, this method seeks to improve patient compliance, reduce adverse effects and increase therapeutic efficacy. The matrix system, which is frequently made up of hydrophilic or hydrophobic polymers. This study explores the physicochemical concepts, polymer kinds and formulation techniques of sustain release matrix tablets. It also goes over the important variables that affect medication release rates, such as drug solubility and polymer concentration. The study also looks at current developments and future directions in the sector, as well as the benefits and possible drawbacks of these systems. This study intends to offer insights on enhancing sustain release matrix tablets for better therapeutic outcomes through thorough analysis.

Key Words: Sustain Release, Matrix Tablet, Polymers, Frequency of dosing.

APSECON/2025/PCPH/EP16

Comparative analysis of synthetic and natural gastro-resistant polymers in drug delivery systems: A review

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Abstract

Gastro-resistant polymers are essential in creating oral drug delivery systems, particularly for drugs that are sensitive to the acidic conditions of the stomach and require targeted release in the small intestine or other areas of the gastrointestinal (GI) tract. These polymers serve to shield active pharmaceutical ingredients (APIs) from the stomach's harsh acidity, thereby preventing premature drug release and degradation. This review explores the comparison between synthetic and natural gastric-resistant polymers, which play a crucial role in improving drug delivery systems aimed at protecting active pharmaceutical ingredients. Synthetic polymers like Eudragit, hydroxypropyl methylcellulose acetate succinate (HPMCAS) and polyvinyl acetate phthalate (PVAP) are known for their strong acid resistance, versatile properties and reliable performance. On the other hand, natural polymers such as chitosan, pectin and alginate offer advantages in terms of biocompatibility, biodegradability and environmental friendliness, though they tend to have limitations in acid resistance and stability under industrial conditions. This study provides a thorough evaluation of these polymers by comparing their gastric resistance, enteric release behaviour and physicochemical characteristics, using in-vitro drug release tests and polymer analysis techniques like FTIR and DSC.

Keywords: Gastro-resistant polymer, synthetic polymers, natural polymers, Eudragit, Alginate.

APSECON/2025/PCPH/EP17

Advancements in the treatment of bacterial meningitis: Exploring novel therapies and future perspectives

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Abstract:

Bacterial meningitis remains a life-threatening condition that demands urgent intervention to prevent significant morbidity and mortality. While current treatments primarily involve broad-spectrum antibiotics and supportive care, emerging therapies offer promising strategies to enhance treatment outcomes and reduce disease burden. This review explores key advancements in the management of bacterial meningitis, focusing on novel antibiotics to combat resistant strains, immunotherapy options including monoclonal antibodies and immune modulation and the development of vaccines to prevent infection. Additionally, adjunctive therapies such as steroids and neuroprotective agents aim to mitigate inflammation and neuronal damage, while gene therapy and nanotechnology represent innovative approaches to target the disease at a molecular level. The potential of host-directed therapies, biomarkers for personalized medicine and point-of-care diagnostics further underscore the future direction of treatment. These evolving strategies have the potential to improve clinical outcomes, particularly in cases of antibiotic resistance, neurological complications and rapid pathogen identification, offering hope for more effective management of bacterial meningitis.

Keywords: Bacterial meningitis, Emerging therapies, Antibiotic resistance, Novel antibiotics, Immunotherapy

APSECON/2025/PCPH/EP18

A review on topical emulgels: Enhancing the efficacy of herbal treatments through advanced drug delivery systems:

Harshith Kumar M S, Parthasarathi K Kulkarni, Tanuja A J, Venkatesh K, Hanumanthachar Joshi
Sarada Vilas College of Pharmacy Mysuru, Karnataka

Abstract:

Topical drug delivery poses significant challenges due to the skin's inherent barrier system, which restricts the permeation and absorption of most hydrophobic drugs. Herbal remedies, utilized for centuries in treating various diseases, including skin conditions, are predominantly hydrophobic, limiting their effectiveness in topical applications. In response to these challenges, researchers have developed innovative drug delivery systems like emulgels, which serve as effective carriers for hydrophobic drug molecules. An emulgel is a combination of an emulsion and a gel, allowing for the incorporation of drugs into globules that enhance absorption through the skin. These formulations are characterized by their ease of application and removal, non-greasy texture and appealing cosmetic properties, along with good penetrating abilities. This review emphasizes the significance of emulgels in delivering herbal extracts, outlines formulation methods and provides an overview of various herbal emulgel formulations explored by researchers. Overall, emulgels demonstrate considerable promise in improving the topical delivery of herbal drugs and enhancing the treatment of skin infections.

Keywords: Herbal emulgels, Plant extracts, Plant constituents, Topical drug delivery, Herbal medicine, Formulation of herbal emulgels.

APSECON/2025/PCPH/EP19

Advances and challenges in transdermal drug delivery systems: A comprehensive review

Suhas B.C, Nagendra R, Siddartha H.N, Venkatesh, Hanumanthachar Joshi
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Abstract:

Transdermal Drug Delivery Systems (TDDS) have emerged as a promising non-invasive method for administering therapeutic agents, offering numerous advantages over traditional, oral and injectable routes, such as enhanced patient compliance, controlled drug release and bypassing first-pass metabolism. Recent advances in TDDS have introduced innovative technologies aimed at overcoming the skin's natural barrier to drug penetration. These include the development of microneedle arrays, nanoparticle-based carriers, iontophoresis, electroporation and 3D printed transdermal patches, all of which have significantly improved the efficiency and versatility of TDDS. Additionally, smart patches with integrated sensors that can monitor drug delivery in real-time are reshaping the landscape of personalized medicine. Despite these advancements, several challenges remain, such as variability in skin permeability, irritation and the complexity of formulating drugs with appropriate molecular properties for effective transdermal delivery. This review provides a comprehensive overview of the latest innovations in TDDS, examines the underlying mechanisms, discusses the clinical applications of these systems and highlights the persistent challenges that must be addressed to further enhance the efficacy and safety of transdermal drug delivery. Future perspectives on TDDS suggest that with continued technological advancements, TDDS could revolutionize the way chronic diseases and systemic conditions are managed.

Keywords: Transdermal Drug Delivery Systems (TDDS), non-invasive drug delivery, patient compliance, controlled drug release, first-pass metabolism, 3D printed patches.

APSECON/2025/PCPH/OOP01

Mesalamine loaded ethyl cellulose nanoparticles ameliorate ulcerative colitis through antioxidant Effect

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Abstract

Purpose: Pharmaceutical research continues to focus on developing novel approaches for the effective treatment of ulcerative colitis (UC). To develop a better system than simple nanoparticle-in-microparticle (NP-in-MP), time-dependent NP or MP and pH-dependent NP or MP, this work sought to construct an enhanced colon-targeting system with a combination of hybrid formulations and dual coating approach consisting of time-dependent nanoparticles loaded in pH-dependent microparticles.

Method: The model drug used was mesalamine and the polymers used were ethyl cellulose (EC) as time dependent polymer and a mixture of Eudragit L100 (EL100) and Eudragit S100 (ES100) as pH dependent polymer. The NP-in-MP were optimized, prepared and characterized to obtain targeted and sustained delivery of drug. The NP were coated with ethyl cellulose to obtain sustained delivery. Then NP were entrapped within eudragit MP using the double emulsion solvent evaporation process. NP-in-MP were evaluated for particle size, entrapment efficiency, surface morphology, *in-vitro* drug release and *in-vivo* evaluation.

Results: The particle size and entrapment efficiency of the selected formulation was 12.4 ± 3.1 µm and 85.36 ± 2.6%. The *in vitro* drug release profile verified that the selected formulation released (6.94±1.23%) less than 10% of the drug in an acidic environment, followed by continuous drug release (93.9±3.15%) in a colonic environment. The in-vivo data confirms that the NP-in-MP are better in treating colitis than NP. As per *in vivo* results, NP-in-MP effectively increased GSH, SOD level and reduces the LPO level as compared to other treatment groups.

Conclusion: The current findings demonstrate the efficient development of NP-in-MP for enhancing the delivery of NP to the colonic region. As per in-vitro and in-vivo results, it is concluded that a hybrid NP-in-MP can be a potential alternative than other treatment carriers to treat inflammatory bowel disease and colorectal cancer.

Keywords: Nanoparticle-in-microparticle, nanoparticles, Ethyl cellulose, Eudragit L100, Eudragit S100, Colon targeting, Ulcerative colitis, Inflammatory bowel disease, Dual coating approach, Hybrid system, System-within-system

INTERNATIONAL JOURNAL OF COMMUNITY PHARMACY
(ISSN-0974-5319)

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International Journal of Community Pharmacy

The Official Publication of ACPI

OBJECTIVES

- To organize into an association of all persons engaged in, interested in or connected with community pharmacy.
- To elevate and establish a standard of competence for community pharmacy.
- To develop and promote standards of education and training for community pharmacy.
- To develop and promote short term informal training programs for individuals interested in community pharmacy.
- To educate hospital trustees, Board of Directors, Board of Visitors and the public to understand that the practice of community pharmacy calls for special training and experience.
- To serve as a forum for exchange of ideas and experiences, and collection and dissemination of information in general community pharmacy.
- To spread the knowledge on the principles, practices, techniques and methods concerning community pharmacy.
- To promote and safeguard the status and the interest of community pharmacy and the interests of those engaged in it.
- To promote sponsor, submit, memorandums, petitions and representations to local, state, union and other authorities for better laws, and influence legislation which affect hospitals and other community pharmacy organizations.
- To organize conferences, seminars, meetings and discussions for the promotion and furtherance of the aims and objects of the ACPI.
- To undertake and bring out, publish, sell, distribute free or otherwise, edit, print and exhibit for sale, magazines publication, bulletins, books pamphlets and the like, in furtherance of the objects of the ACPI and in any event not for the purpose of carrying a trade there from but only for the purposes of furthering the objects of the ACPI.
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- To make from time to time, regulation and bye-laws for the control, conduct and regulation of the affairs of the ACPI.
- To confer Fellowships in community pharmacy on those who have done or are doing noteworthy service in the field of community pharmacy.
- To generally do all such other things as are incidental or conducive to the attainment of any or all of the above-mentioned objects.

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International Journal of Community Pharmacy
The official publication of Association of Community Pharmacists of India (ACPI)
Secretariat & Communication address
Sarada Vilas College of Pharmacy
Krishnamurthy Puram, Mysuru - 570 004, Karnataka
Ph : 0821-4262415