Raghavendra
Institute of Pharmaceutical Education and Research (RIPER)-Autonomous

4th International Health Economics & Outcomes Research Conference- 2025

25 & 26 April, 2025
Andhra Pradesh, India

ABSTRACT BOOK

Organized by
International Society for Pharmacoeconomics and Outcomes Research (ISPOR) India Andhra Pradesh Regional Chapter
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In Association with

ISPOR
RIPER, India
Student Chapter

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INNOVARE ACADEMIC SCIENCES
Knowledge to Innovation

About International Society for Pharmacoeconomics and Outcomes Research (ISPOR):

ISPOR was established in 1995 by a small group of dedicated volunteers and visionaries with the goal of serving as a catalyst to advance the science and practice of health economics and outcomes research (HEOR) around the world. The Society was originally known as the Association for Pharmacoeconomics and Outcomes Research (APOR) and led by its founding Executive Director, Marilyn Dix Smith, PhD. As the field of HEOR has grown, so has ISPOR. The Society's membership has expanded from just 240 members at its founding to nearly 18,000 individual and chapter members from more than 100 countries worldwide. As a multistakeholder organization, the Society's membership includes various healthcare stakeholders, including researchers and academicians, assessors and regulators, payers and policy makers, the life sciences industry, healthcare providers, and patient engagement organizations.

International Society for Pharmacoeconomics and Outcomes Research (ISPOR)-India, Andhra Pradesh Chapter:

The ISPOR - India, Andhra Pradesh Regional Chapter was officially approved and established on June 14, 2012, under the leadership of Dr. Y. Padmanabha Reddy, who serves as the President of the ISPOR India AP Regional Chapter. The Chapter is dedicated to the development of a new paradigm in pharmacy practice education, transitioning from a traditional curriculum-based approach to a comprehensive healthcare orientation focused on health outcomes. This initiative aims to enhance the patient's quality of life and promote the rational use of medications. Over the course of 11 years, the Chapter has successfully organized three international conferences and eleven national conferences, receiving commendation from various professional bodies within the pharmacy sector and ISPOR. The branch consistently strives for innovative contributions to the evidence-based learning, teaching, practice, and research within the pharmacy profession, adhering to global standards.

About the Conference:

The Fourth International Health Economics and Outcomes Research Conference represents a distinguished forum aimed at examining the significance of real-world data (RWD), patient-centered research, and regulatory advancements in influencing healthcare decisions, policies, and innovations within India. This esteemed event will convene healthcare professionals, researchers, industry leaders, and policymakers to deliberate on the most recent advancements in real-world evidence (RWE), its implications for the Indian healthcare system, and the potential for digital transformation.

About Raghavendra Institute of Pharmaceutical Education and Research (RIPER) Autonomous:

Raghavendra Institute of Pharmaceutical Education and Research (RIPER) was established by a group of pharmacy teachers in the year 2002 under Raghavendra Educational and Rural Development Society (RERDS). RIPER started in 2002 with B. Pharm followed by D. Pharm and has attained growth by offering M. Pharm in various specializations such as Pharmaceutical Analysis, Pharmaceutics, Pharmacology, Pharmacy Practice, Industrial Pharmacy, and Pharmacy Quality Assurance. Pharm. D and Pharm. D (PB) programs are offered with exposure to the students at various national hospitals.

RIPER is one of the largest premier pharmacy institutes in the country, approved by AICTE, PCI, New Delhi, and affiliated by Jawaharlal Nehru Technological University Anantapur (JNTUA), Andhra Pradesh, India.

RIPER is conferred with Autonomous Status as per UGC norms. The college is accredited by NBA, New Delhi for UG courses and NAAC with "A" grade. RIPER is a recognized and approved research center for Ph. D Admissions under JNTUA, Anantapur and MAHE, Manipal.

Chief Patron Message

Dr. Y Padmanabha Reddy. *M. Pharm, Ph. D, F.I.C*
Professor and Principal
Raghavendra Institute of Pharmaceutical Education and Research (RIPER) - Autonomous
Ananthapuramu, Andhra Pradesh

It gives me immense pleasure to invite you to be part of the ***4th International Health Economics and Outcomes Research Conference on "Innovative Healthcare – 2025: Integrating Real-World Data, Patient-Centric Research, Regulatory Advancements and Digital Transformation"*** *organized by the* **International Society for Pharmacoeconomics and Outcomes Research (ISPOR) India-Andhra Pradesh Chapter** *in Association with* **ISPOR RIPER, India Student Chapter, Raghavendra Institute of Pharmaceutical Education and Research (RIPER) – Autonomous** *from 24th to 26th April, 2025.*

The ISPOR India Andhra Pradesh Regional Chapter is dedicated to pioneering a novel paradigm shift in pharmacy practice education, transitioning from traditional curriculum-focused teaching to a more patient-centered healthcare orientation. This transformative approach emphasizes training geared towards improving patient quality of life and ensuring rational medication use. The conference underscores the pivotal role of real-world data and patient-centric research, particularly in Health Economics and Outcomes Research (HEOR). The recent regulatory advancements and digital transformation, including the incorporation of artificial intelligence (AI) in healthcare, promises enhanced patient outcomes, optimized medication adherence, cost reduction, and groundbreaking advancements in disease prediction and prevention. As efficient and accurate data collection techniques evolve, its potential to revolutionize healthcare delivery and management becomes increasingly apparent. By delving into the significance of real-world data and patient-centric research in healthcare, this conference aims to illuminate pathways towards harnessing its full potential for the betterment of global healthcare systems.

I wish a great success.

With Best wishes,

Dr. Y Padmanabha Reddy. M. Pharm, Ph. D, F.I.C
Chief Patron

Patron Message

Dr. J. Raveendra Reddy. *M. Pharm, Ph. D*

Professor and Vice-Principal

Raghavendra Institute of Pharmaceutical Education and Research (RIPER) - Autonomous

Ananthapuramu, Andhra Pradesh

It gives me immense pleasure to invite you to be part of the ***4th International Health Economics and Outcomes Research Conference on "Innovative Healthcare – 2025: Integrating Real-World Data, Patient-Centric Research, Regulatory Advancements and Digital Transformation"*** *organized by the* **International Society for Pharmacoeconomics and Outcomes Research (ISPOR) India-Andhra Pradesh Chapter** *in Association with* **ISPOR RIPER, India Student Chapter, Raghavendra Institute of Pharmaceutical Education and Research (RIPER) – Autonomous** *from 24th to 26th April, 2025.*

Wishing the conference resounding success as it delves into the profound impact of real-world data, patient-centric research, regulatory advancements and digital transformation on healthcare, particularly in Health Economics and Outcomes Research (HEOR). May the exploration of real-world data's potential pave the way for innovative solutions to complex healthcare challenges, ultimately leading to improved patient outcomes, enhanced safety, and the advancement of healthcare delivery worldwide.

I wish a great success.

With Best wishes,

Dr. J. Raveendra Reddy. M. Pharm, Ph. D
Patron

Convener Message

Dr. M. Manoj Kumar. *Pharm. D., Ph. D. MPH.*
Associate Professor and HOD
Department of Pharmacy Practice
Raghavendra Institute of Pharmaceutical Education and Research (RIPER) – Autonomous, Ananthapuramu, Andhra Pradesh

It is with great pleasure and excitement that I extend my warmest welcome to all of you, esteemed experts, scholars, and professionals to the ***4th International Health Economics and Outcomes Research Conference on "Innovative Healthcare – 2025: Integrating Real-World Data, Patient-Centric Research, Regulatory Advancements and Digital Transformation"*** *organized by the* **International Society for Pharmacoeconomics and Outcomes Research (ISPOR) India-Andhra Pradesh Chapter** *in Association with* **ISPOR RIPER, India Student Chapter, Raghavendra Institute of Pharmaceutical Education and Research (RIPER) – Autonomous** *from 24th to 26th April, 2025.*

Throughout the conference, we have an impressive lineup of renowned speakers, panel discussions, and presentations (Oral, Poster, and Spotlight) that will cover a diverse array of topics. We extend our heartfelt wishes for the success of this conference, which highlights the crucial role of real-world data, patient-centric research, regulatory advancements and digital transformation in reshaping healthcare, especially in Health Economics and Outcomes Research (HEOR). Digital transformation signifies a paradigm shift, offering prospects for improved patient outcomes, enhanced medication adherence, cost efficiency, and transformative advancements in disease management. Through this conference, we aim to explore the profound impact of real-world data and patient-centric research in healthcare, charting a course towards leveraging its vast potential to enhance global healthcare systems significantly.

I wish a great success.

With Best wishes,
Dr. M. Manoj Kumar
Convener

Co - Convener Message

Dr. A. Sudheer, *M. Pharm, Ph. D.*

Asso. Professor

Department of Pharmacy Practice

Raghavendra Institute of Pharmaceutical Education and Research (RIPER) – Autonomous, Ananthapuramu, Andhra Pradesh

It gives me immense pleasure to invite you to be part of the ***4th International Health Economics and Outcomes Research Conference on "Innovative Healthcare – 2025: Integrating Real-World Data, Patient-Centric Research, Regulatory Advancements and Digital Transformation"*** *organized by the* **International Society for Pharmacoeconomics and Outcomes Research (ISPOR) India-Andhra Pradesh Chapter** *in Association with* **ISPOR RIPER, India Student Chapter, Raghavendra Institute of Pharmaceutical Education and Research (RIPER) – Autonomous** *from 24th to 26th April, 2025.*

The conference highlights the crucial significance of real-world data, patient-centric research, regulatory advancements and digital transformation in healthcare, especially in Health Economics and Outcomes Research (HEOR). Digital integration marks a pivotal shift towards a future where patient outcomes are enhanced, medication adherence is optimized, costs are reduced, and remarkable strides are made in disease prediction and prevention. With each era of digital transformation, its impact on healthcare delivery and management becomes more evident. This conference serves as a platform to delve into the profound implications of real-world data, patient-centric research, regulatory advancements and digital transformation in healthcare, illuminating pathways to fully leverage its capabilities for the advancement of global healthcare systems.

I wish a great success.

With Best wishes,
Dr. A. Sudheer

Co-Convener

Chief Guest Message

Dr. G. V. Subba Reddy

Professor of Chemistry and Director,

JNTUA – OTPRI,

Ananthapuramu, Andhra Pradesh.

It is with great pleasure and honor that I extend my warmest greetings to all the distinguished participants, scholars, researchers, and practitioners gathered here for the ***4th International Health Economics and Outcomes Research Conference on "Innovative Healthcare – 2025: Integrating Real-World Data, Patient-Centric Research, Regulatory Advancements and Digital Transformation"*** organized by the **International Society for Pharmacoeconomics and Outcomes Research (ISPOR) India-Andhra Pradesh Chapter** in Association with **ISPOR RIPER, India Student Chapter, Raghavendra Institute of Pharmaceutical Education and Research (RIPER) – Autonomous** from 24th to 26th April, 2025.

As the esteemed Chief Guest of this conference, I am honored to address the pivotal role of real-world data, patient-centric research, regulatory advancements and digital transformation in shaping the future of healthcare, particularly in Health Economics and Outcomes Research (HEOR). Digital transformation including AI's integration into healthcare systems promises to revolutionize patient care, optimize medication adherence, drive cost efficiencies, and propel groundbreaking advancements in disease prevention and management.

In my experience in the pharmaceutical and healthcare world, I have never seen any other era grow and evolve as rapidly as the digital era. We have to incorporate different aspects to provide good quality healthcare to all. This conference plays a pivotal role by incorporating

real-world data and patient-centric research along with the regulatory advancements and the digital transformation that we are experiencing now. The conference is bringing together the expertise from these domains at one place.

I commend the organizers of this conference for their foresight in exploring the significance of these topics. The knowledge gained from this conference will surely help shape a better healthcare delivery worldwide, one that is of top quality and reaches everyone.

I encourage all participants to engage actively in the sessions, share insights, and explore opportunities for collaboration.
Thank you, and I wish you all a successful and enriching conference experience.

With Best wishes,

Dr. G. V. Subba Reddy

Professor of Chemistry & Director,

JNTUA-OTPRI, Ananthapuramu.

Guest of Honour Message

Dr. B. Praveen Kumar
MBBS, MS Orthopaedics,
Managing Director,
RDT Hospitals, Bathalapalli.

It is with great pleasure and honor that I extend my warmest greetings to all the distinguished participants, scholars, researchers, and practitioners gathered here for the ***4th International Health Economics and Outcomes Research Conference on "Innovative Healthcare – 2025: Integrating Real-World Data, Patient-Centric Research, Regulatory Advancements and Digital Transformation"*** organized by the **International Society for Pharmacoeconomics and Outcomes Research (ISPOR) India-Andhra Pradesh Chapter** in Association with **ISPOR RIPER, India Student Chapter, Raghavendra Institute of Pharmaceutical Education and Research (RIPER) – Autonomous** from 24th to 26th April, 2025.

As the esteemed Guest of Honour of this conference, I am honored to address the pivotal role of real-world data, patient-centric research, regulatory advancements and digital transformation in shaping the future of healthcare, particularly in Health Economics and Outcomes Research (HEOR). Digital transformation including AI's integration into healthcare systems promises to revolutionize patient care, optimize medication adherence, drive cost efficiencies, and propel groundbreaking advancements in disease prevention and management.

As we witness the evolution of the digital era, it becomes increasingly evident that they hold the key to transforming healthcare delivery and management globally. By harnessing the power of real-world data and patient-centric research, we can unlock innovative solutions to the complex challenges facing healthcare systems worldwide.

I commend the organizers of this conference for their foresight in exploring the significance of real-world data, patient-centric research, regulatory advancements and digital transformation and for providing a platform to facilitate meaningful discussions and collaborations in this rapidly advancing field.

I encourage all participants to engage actively in the sessions, share insights, and explore opportunities for collaboration. Together, let us leverage the potential of digital transformation to drive positive change, improve patient outcomes, and usher in a new era of healthcare excellence.

Thank you, and I wish you all a successful and enriching conference experience.

With Best wishes,

Dr. B. Praveen Kumar

MBBS, MS Orthopaedics

Managing Director

RDT Hospitals, Bathalapalli.

Dr. M Muniyandi

Scientist 'E' & HOD
Dept. of Health Economics,
National Institute for Research in Tuberculosis,
Chennai

As a scientist and synergizing more than 22 years of health economic research expertise and leadership, Dr M Muniyandi is heading the Department of Health Economics at the ICMR-National Institute for Research in Tuberculosis in Chennai. He has involved in diverse socio-economic, behavioural and epidemiological research and intervention projects in the context of improving population health. He has contributed as a principal investigator and co-investigator in various research projects. Sir was able to get fund from DHR, MoHFW and Established Regional Resource Centre for Health Technology Assessment in India (HTAIn) at ICMR-NIRT, Chennai. A study on Economic Evaluation of a standard treatment regimen of anti-tuberculosis drugs for patients with MDR-TB (STREAM Stage II) received fund from Liverpool School of Tropical Medicine, UK. He has made significant scientific outputs under my working institutes in terms of documentation and dissemination of research findings. Sir has more than 130 research papers published in reputed indexed peer reviewed journals with high impact factors.

Particular interest in disease burden estimation research and previous experience in such estimation and its application to policy

- To estimate the households experiencing catastrophic costs due to TB to achieve the one of the END TB target of zero TB affected families facing catastrophic TB related costs
- Identifying costs contributing to catastrophic expenditure due to TB and develop strategies to provide financial protection to patients
- Health Technology Assessment (HTA) for implementation of new technologies & strategies TB & other disease
- TB Burden amongst marginalized and vulnerable population, example Saharia tribal population

Dr. Hitesh Bharucha

Associate Director –
Real World Evidence -HEOR,
EVERSANA,
Bengaluru

Hitesh Bhupendra Bharucha is an accomplished clinical research and medical affairs professional with over 15 years of progressive experience in leading Phase II to Phase IV clinical trials and Real-World Evidence (RWE) studies. His expertise spans a wide range of therapeutic areas including oncology, diabetes, immunology, inflammatory bowel disease (IBD), rare bleeding disorders, and precision diagnostics. With a solid foundation in pharmaceutical sciences and a career shaped by hands-on experience in both global and domestic settings, Hitesh has played a pivotal role in the execution and delivery of complex clinical research projects across India, APAC, and the European Union.

Currently serving as Associate Director – RWE-HEOR at EVERSANA India Pvt. Ltd., Hitesh provides strategic oversight and project leadership for real-world and health economics studies for global pharmaceutical clients. In this role, he is responsible for project planning, regulatory submission support, stakeholder engagement, team development, and the implementation of innovative clinical strategies. He has previously held senior roles at leading organizations such as Novartis, Farcast Biosciences, phamax Market Access, Quintiles Technologies (IQVIA), and Roche India, contributing to medical affairs, regulatory affairs, and clinical operations.

Hitesh is known for his strategic thinking, team leadership, and cross-functional collaboration. He has been recognized with multiple awards for his contributions to clinical trial execution, regulatory submissions, and operational excellence. In addition to his professional achievements, he is actively involved in scientific communication and has co-authored several publications and posters on topics such as digital health interventions, retrospective chart audits, and decentralized clinical trials.

Academically, Hitesh is pursuing Ph.D. in Clinical Pharmacology and holds an Executive MBA, a postgraduate diploma in clinical research and regulatory affairs, and a bachelor's degree in pharmaceutical sciences. He has also completed specialized training in ICH-GCP, CTMS, eTMF systems, centralized monitoring, and agile project management. With a passion for clinical innovation and a dedication to improving patient outcomes, Hitesh continues to contribute meaningfully to the advancement of clinical research and healthcare delivery.

Dr. Biju Soman

Professor & Head,
Achutha Menon Centre for Health Science Studies, (AMCHSS)
Sree Chitra Tirunal Institute for Medical Sciences & Technology, (SCTIMST)
Trivandrum, India

Dr. Biju Soman is a public health physician, researcher, and academic leader with over two decades of experience in epidemiology, infectious disease control, health informatics, and medical education. He currently serves as Professor and Head at the Achutha Menon Centre for Health Science Studies, SCTIMST, Trivandrum, a premier institute under the Department of Science & Technology, Government of India.

Dr. Soman holds an MBBS, MD in Community Medicine, and a Diploma in Public Health from the University of Kerala, and an MSc in Control of Infectious Diseases from the University of London. He has received advanced training in health informatics (University of Oslo, Norway), teaching methodology (Boston School of Public Health, USA), and geographic information systems (NRSC, Hyderabad), among others.

He has served in several key academic and governmental roles, including Assistant Professor positions at AIMS Kochi and KSHEMA Mangalore, and as Program Officer (Health) with the Department of Rural Development, Government of Kerala. Since 2004, he has been a faculty member at SCTIMST, taking on leadership roles in research, teaching, and public health policy.

Dr. Soman has led multiple high-impact, government-funded research projects focused on digital health, geospatial epidemiology, and disease surveillance. Notable projects include the Mobile Telemedicine Project in Wayanad, real-time COVID-19 monitoring using data science, geospatial analysis of TB data through NIKSHAY, and health technology assessments. His work has received funding from DST, ICMR, DHR, and other national bodies.

He has authored over 100 peer-reviewed publications and contributed to several book chapters and national reports. His research appears in high-impact journals including *BMJ*, *The Lancet Healthy Longevity*, *PLoS ONE*, *International Journal of Stroke*, and *Ecological Informatics*. He is also a patent holder and frequent contributor to public health innovation through technology.

As a mentor, Dr. Soman has guided over 40 master's and doctoral-level students. He teaches modules on public health technologies, infectious disease epidemiology, and database management. He is also widely recognized for his work on the social determinants of health, spatiotemporal analysis, and health systems strengthening in tribal and underserved communities.

Dr. Soman continues to serve as a thought leader and collaborator in public health research and capacity building, combining grassroots fieldwork with cutting-edge data science to inform policy and practice.

Dr. Kranthi Swaroop Koonisetty, PharmD, MS

Healthcare Analytics Epidemiologist,
Pennsylvania Department of Health,
USA

Dr. Kranthi Swaroop Koonisetty is a highly accomplished healthcare analy[illegible] currently serving with the Pennsylvania Department of Health in the United States. With a background that bridges clinical pharmacy, epidemiology, and data science, he has emerged as a critical contributor to statewide public health surveillance and quality improvement initiatives.

Dr. Koonisetty earned his Doctor of Pharmacy (PharmD) and further advanced his expertise with a Master of Science -MS, Epidemiology, enabling him to integrate clinical insight with analytical acumen in addressing complex healthcare challenges.

At the Pennsylvania Department of Health, Dr. Koonisetty is primarily involved in enhancing the quality and integrity of antimicrobial use (AU) data submitted to the National Healthcare Safety Network (NHSN). His efforts support healthcare facilities in optimizing infection prevention strategies, especially in the context of antimicrobial stewardship and healthcare-associated infection (HAI) monitoring.

In addition to his role in epidemiological analysis, Dr. Koonisetty has also been active in education and outreach, including co-presenting a statewide stewardship webinar in collaboration with the Pennsylvania Dental Association, focusing on responsible antibiotic use in dentistry.

His international research footprint includes:

- A cross-national study on COVID-19 vaccine hesitancy, covering populations in the United States, India, and Canada.
- Investigative work on dengue fever management among physicians in India.
- Multiple publications in peer-reviewed journals, particularly in the domains of public health, behavioral sciences, and infectious disease management.

Dr. Koonisetty's work exemplifies the synergy between clinical knowledge and data-driven innovation, and he remains deeply committed to advancing public health through informed policy, collaborative engagement, and rigorous analytics.

Dr. Pruthvi Raj Paibhavi, PharmD, MSc (Translational Oncology)

Senior Pharmacy Technician (Clinical Trials),
Dept. of Hematology and Oncology,
Children's Health Ireland (CHI)

Dr. Pruthvi Raj Paibhavi is a dedicated Clinical Oncology Pharmacist currently serving at Children's Health Ireland (CHI). With a robust academic background, he holds a Doctor of Pharmacy (PharmD) degree, a Fellowship in Oncology Pharmacy, and a Master of Science in Translational Oncology.

Dr. Paibhavi's career is marked by a commitment to advancing oncology pharmacy practice. His expertise encompasses the integration of pharmacological knowledge with translational research, aiming to bridge the gap between laboratory findings and clinical application. At CHI, he plays a pivotal role in optimizing chemotherapy protocols, ensuring patient safety, and contributing to multidisciplinary oncology care teams.

Beyond his clinical responsibilities, Dr. Paibhavi is actively involved in research initiatives focused on improving therapeutic outcomes in oncology. His work reflects a dedication to personalized medicine and the development of innovative treatment strategies for cancer patients.

Dr. Paibhavi's contributions to the field of oncology pharmacy underscore his commitment to enhancing patient care through evidence-based practices and continuous professional development.

Dr. Harish V Reddy

MBBS, MRCP (UK), FRCR (UK - Clinical Oncology),
MSc Oncology, ESMO Certified, MBA (Healthcare)

Group Medical Director,
Associate Vice President,
HCG- Bengaluru

Dr. Harish V Reddy is a distinguished Clinical Oncologist and the current Group Medical Director at HCG, a leading oncology network with 23 hospitals across India and Kenya. With over two decades of global clinical experience, Dr. Reddy specializes in the management of urological, gynaecological, breast, lung, and gastrointestinal malignancies. His expertise spans systemic therapies—including immunotherapy and targeted therapy—as well as advanced radiotherapy techniques such as IMRT, IGRT, SABR, brachytherapy, and radiopharmaceuticals.

Trained and certified in the UK, Dr. Reddy holds postgraduate qualifications from esteemed institutions including the University of Nottingham and the Royal College of Radiologists. He has served in several major UK hospitals, including Southampton, Peterborough, Nottingham, and Northampton, assuming clinical leadership roles and contributing significantly to service development and patient care pathways.

An active researcher and educator, Dr. Reddy has been involved as a principal and sub-investigator in numerous international oncology clinical trials. He has presented at prestigious forums like ESTRO and ESMO, and contributed to peer-reviewed publications. He also mentor's trainees and nurses and is deeply engaged in protocol development and audit processes.

Dr. Reddy combines his clinical acumen with strategic vision, having completed an Executive MBA in Healthcare. His management expertise includes outpatient efficiency optimization, cancer center planning, and integration of digital health innovations like Patient Triggered Follow-Up (PTFU) systems.

Dr. Reddy continues to drive excellence in cancer care delivery, research, and education—playing a vital role in shaping the future of oncology services both in India and globally.

Dr. C. Prabhakar Reddy

M.B.B.S, M.D, (Pharmacology),
D. M (Clinical Pharmacology & Therapeutics),

Professor
Department of Clinical Pharmacology & Therapeutics,
Nizam's Institute of Medical Sciences,
Hyderabad.

Dr. C. Prabhakar Reddy is a renowned Clinical Pharmacologist with extensive experience in academic, research, and regulatory aspects of the field. He is currently serving as an Additional Professor at Nizam's Institute of Medical Sciences (NIMS), Hyderabad, where he also mentors DM and PhD students in Clinical Pharmacology & Therapeutics.

He holds an M.B.B.S. from Kurnool Medical College, M.D. in Pharmacology from Sri Ramachandra Medical College, Chennai, and a D.M. in Clinical Pharmacology from NIMS. Since 2013, he has been a Subject Expert for the Deputy Drug Controller General of India (Hyderabad Zone), overseeing inspections of clinical trial sites, CROs, and ethics committee operations.

Dr. Reddy has led and participated in several high-impact research projects, including Phase I–III clinical trials of Covaxin and the COVID-19 nasal vaccine by Bharat Biotech, vaccine trials by Sanofi & GSK, studies on antimicrobial stewardship, pesticide exposure, and endemic kidney disease. He has published extensively in prestigious journals such as *The Lancet*, *npj Vaccines*, *Scientific Reports*, and more.

He has received numerous accolades, including:

- Research Excellence in Clinical Pharmacology – International Congress 2024, Trichy
- Trailblazer Award – Hybiz TV HealthCare Awards, Hyderabad
- Best Investigator in Vaccine Development – Global PHT Expo & Summit 2023, New Delhi
- Young Scientist Award – Association of Hydrologists of India
- VIHA Award for Excellence in Clinical Pharmacology, 2021 – Chennai

He is an esteemed member of the Indian Pharmacological Society, American College of Clinical Pharmacology, and British Pharmacological Society. With his significant contributions to research and policy, Dr. Reddy continues to shape the future of clinical pharmacology in India.

Dr. Richard Kirubakaran

Director,
Lead Epidemiologist,
3 Analytics,
Chennai, India

Mr. Richard Kirubakaran is a seasoned Evidence Synthesis Specialist and Epidemiologist with over 15 years of experience in biostatistics, evidence-based medicine, and systematic reviews. He is currently affiliated with the Centre for Biostatistics and Evidence-Based Medicine, Vellore, and also works as a part-time consultant epidemiologist with 3Analytics.
He previously served as a Research Scientist in Biostatistics at Cochrane South Asia and Christian Medical College (CMC), Vellore. During his tenure, he provided statistical expertise, led systematic reviews, and trained healthcare professionals in evidence-based medicine. He has co-authored numerous Cochrane systematic reviews and is a peer referee for the Cochrane Wounds and Infectious Disease Review Groups. He also serves as an Associate Section Editor for the Indian Journal of Gastroenterology.

Mr. Kirubakaran holds dual Master's degrees in Statistics and Applied Psychology. He is well-versed in statistical software including SPSS, Stata, R, and SAS, and in systematic review tools such as Review Manager, Covidence, Meta-Disc, and CADIMA. He is proficient in reference management and guideline development platforms like GRADEPro and MAGICapp.

He has contributed to multiple WHO-commissioned reviews and national guideline development projects, including India's COVID-19 anticoagulation guidelines and PPI stewardship recommendations. He has over 100 peer-reviewed publications spanning diverse areas such as infectious diseases, maternal and child health, mental health, and non-communicable diseases.

As an educator, he has taught epidemiology and biostatistics to medical, nursing, and allied health students and has been a faculty member for Cochrane review workshops across India since 2010. His research and academic involvement are backed by extensive training, including short courses at Oxford University and the Indian Statistical Institute.
Mr. Kirubakaran continues to be a key contributor to public health policy, clinical guidelines, and systematic evidence generation in India and beyond.

Dr. Priyank Tripathi,

Clinical Pharmacologist & Senior Manager – Clinical Administration,
Group Head- Clinical Pharmacology
HCG Enterprises Ltd.,
Bengaluru, India

Dr. Priyank Tripathi is an accomplished clinical pharmacologist with over a decade of impactful contributions in oncology pharmacy, clinical administration, and healthcare management. He currently serves as the Group Head of Clinical Pharmacology and Clinical Administration at HCG Enterprises Ltd., Bengaluru, and is an Assistant Member Secretary of the HCG Central Ethics Committee.

Dr. Tripathi holds multiple degrees including a Doctor of Pharmacy, Bachelor of Pharmacy, Diploma in Pharmacy, and a Postgraduate Diploma in Clinical Research. His academic excellence and practical insights have earned him accolades such as the Best Employee of the Year (2016-17) by HCG Enterprises and the Distinguished Alumni Award from Adichunchanagiri University (2020).

He is actively involved in healthcare strategy, drug policy design, and clinical governance, with a special focus on oncology. As Course Director of the Fellowship in Oncology Pharmacy, he pioneers specialized training for Pharm D graduates. He is also a certified NABH Internal Auditor and a frequent speaker at national and international conferences.

A prolific researcher, Dr. Tripathi has authored multiple peer-reviewed publications covering diverse topics like immune checkpoint inhibitors, antimicrobial stewardship, and hypertension risk in undiagnosed populations. His work extends into developing EMR systems, infection control policies, and hospital accreditation frameworks.

Dr. Tripathi's career is driven by a commitment to patient-centered care, continual innovation in oncology pharmacy, and the advancement of clinical pharmacy practice in India.

ORGANIZING COMMITTEE

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8088526022

Co-Convener
Dr. A. Sudheer
6301545099

Dr. V. Uma Maheshwara Rao

Dr. K. Vinod Kumar

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ISPOR-2025
Program Schedule

Day-1 24th April 2025			
Time	**Event**	**Speaker**	**Venue**
9.00 to 10.00 Am	Registration for Preconference Workshop	Front Hall	
10.00 to 10.30 Am	Hi-Tea	Cafeteria	
10.30 Am to 12.00 Pm	Pre-Conference Workshop: Systematic Review and Meta - Analysis: A Hands-on Training	Dr. Richard Kirubakaran Director, Lead Epidemiologist 3 Analytics Chennai, India	Hall-1 Auditorium
12.00 to 12.30 Pm	Interactive session		
12.30 to 1.00 Pm	Lunch Break		
1.00 to 3.00 Pm	Systematic Review and Meta - Analysis: A Hands-on Training	Dr. Richard Kirubakaran Director, Lead Epidemiologist 3 Analytics Chennai, India	Hall-1 Auditorium
3.00 to 3.30 Pm	Tea Break	Cafeteria	

Day-2 25th April 2025			
Time	**Event**	**Speaker**	**Venue**
9.00 to 10.00 Am	Registration for Conference & Hi-Tea	Front Hall	
10.00 to 11.00 Am	Inauguration		
11.00 Am to 12.00 Pm	Session 1: A Comprehensive Economic Evaluation of Innovative Interventions for Tuberculosis Management	Dr. Muniyandi Malaisamy Scientist D and HOD Dept. of Health Economics National Institute for Research in Tuberculosis, Chennai, India	Hall-1 Auditorium
11.00 Am to 12.00 Pm	Session-2 Integration of Advanced Data Science Techniques in Public Health: an Empirical Examination of Field Applications	Dr. Biju Soman Professor & Head AMCHSS, SCTIMST Trivandrum, India	Hall-2 IQAC Hall
12.00 to 1.00 Pm	Session-3 The Role and Importance of RWE in Advancing Scientific Inquiry and EBM	Dr. Hitesh Bharucha Associate Director Real World Evidence EVERSANA, Bengaluru, India	Hall-1 Auditorium
12.00 to 1.00 Pm	Session-4 Regulatory Advancements and the Crucial Role of RWE in Oncology Practices: A Global Perspective	Dr. Priyank Tripathi Clinical Pharmacologist & Senior Manager - Clinical Administration, Group Head - Clinical Pharmacology HCG Enterprises Ltd., Bengaluru, India	Hall-2 IQAC Hall
1.00 to 1.30 Pm	Lunch Break		
1.45 Pm onwards	Spotlight presentations		Hall-1
	Oral presentations and poster presentations		Smart classroom
2.30 to 3.30 Pm	Session-5 Patient-Centric Approach in Clinical Trials: Enhancing Outcomes Through Participant Engagement and Personalized Strategies	Dr. Prabhakar Reddy Associate Professor Dept. Of Clinical Pharmacology & Therapeutics, NIMS - Hyderabad, India	Hall-1
2.30 to 3.30	Session-6	Dr. Pruthvi Raj Paibhavi	Hall-2

Pm	Advancements in Aseptic Compounding Techniques: Implications for Clinical Practice	Senior Pharmacy Technician (Clinical Trials) Dept. of Hematology and Oncology Children's Health Ireland (CHI)	
3.40 to 4.30 Pm	Cultural Program followed by Hi-Tea		
Day-3 26th April 2025			
Time	**Event**	**Speaker**	**Venue**
9.00 to 10.00 Am	Session-7 Clinical Trials and Data Analytics-impacting Health Economics and Real World Evidence in an oncology Hospital Setting	Dr. Harish V Reddy Group Medical Director – HCG Chain of Hospitals, Bangalore, Karnataka State	Hall-1 Auditorium
9.00 to 10.00 Am	Session-8 Real World Data in 2025: From Surveillance to Stewardship in USA Scenario	Dr. Kranthi Swaroop Koonisetty Healthcare Analytics Epidemiologist Pennsylvania Department of Health, USA	Hall-2 IQAC Hall
10.00 to 10.30 Am	Mann ki Baat	Host by Dr. Manoj Kumar M An Interactive discussion between speakers and delegates involves the speakers sharing their personal experiences and journeys in pharmacy, fostering dialogue, and exchanging insights.	Hall-1 Auditorium
10.30 to 11.00Am	Best Presentation Announcement		Hall-1 Auditorium
11.00 Am to 12.00Pm	Valedictory		
12.00 to 1.00 Pm	Lunch follows dispersion		

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RIPER/ISPOR/2025/PP/001

STEM CELL THERAPY IN TYPE 1 DIABETES

R. SAI ABHISTIKA

Department of Pharmacy Practice, St.PaulsCollege of Pharmacy,Turkayamjal, Hyderabad,Telangana, India.
Email: royyalasaiabhistika1504@gmail.com

Abstract

MSCs have been used in human clinical trials, showing that stem cell transplantation has beneficial effects on T1DM in an open-label, non-randomized, parallel-armed prospective study enrolled 53 participants including 33 adult-onset (≥18 years) and 20 juvenile-onset T1DM. The results revealed that an intravenous dose of allogeneic UC-MSCs was safe in people with newly diagnosed T1DM at 12 months of follow-up, which probably led to better islet β-cell protection compared with standard treatment alone during the first year after diagnosis.Clinical Trials proved that transplantation of UC-MSCs was safe and associated with moderate improvement of metabolic measures in patients with established T1DM.It also revealed that MSC injection through liver puncture could successfully decrease the levels of insulin, islet cells, and glutamic acid decarboxylase (GAD) antibody in two patients within 1 year, with a decreased concentration of blood glucose and HbA1c and increased concentration of C-peptide, indicating immune regulatory cell tolerance.

Keywords: Type 1 Diabetes Mellitus, Stem Cells, Insulin, Islet β-cell

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RIPER/ISPOR/2025/PP/002

OVERCOMING BARRIERS: SUCCESSFUL TELEHEALTH MANAGEMENT OF UNSPECIFIED PSYCHOSIS IN A RURAL SETTING

R. MANU

Department of Pharmacy Practice,Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur, India.Email: manu003r@gmail.com

Abstract

Unspecified psychosis is a challenging mental health condition often requiring a multidisciplinary approach for effective management. Telemedicine is capable of bridging major gaps in access to psychiatric care in rural areas. This case report describes a 24-year-old male from rural India diagnosed with unspecified psychosis, who was subsequently managed via teleconsultation at Jiyyo Mitra E-Clinic in 22 sessions over 2 years. The patient showed significant symptomatic improvement with very few recurrences through medication adjustment and regular follow-ups. This case clarifies the role that telehealth can play in delivering easily accessed and affordable mental health services in underserved regions.

K**eywords:** Unspecified Psychosis, Telemedicine, Rural Healthcare, Case Report, Psychiatric Management

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EFFECT OF EDUCATIONAL INTERVENTIONS ON KNOWLEDGE, ATTITUDES, AND PRACTICES CONCERNING PARENTS' RECOMMENDATIONS FOR HUMAN PAPILLOMAVIRUS VACCINATION IN DAUGHTERS AGED 8 TO 14 YEARS IN RURAL SCHOOLS: A PROSPECTIVE OBSERVATIONAL STUDY

P.V. SAI SRUTHI*, S. NISCHAY REDDY, K. HARSHA PRIYA, M. MANOJ KUMAR

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research, Anantapur, India.
Email: venkatasaisruthipuli@gmail.com

Abstract

Objectives: To assess the current knowledge, Attitude, and Practices about HPV vaccination among parents having daughters aged 8 to 14 years. To identify factors influencing parents' recommendations of HPV vaccination to their daughters.

Methods: This multi-school, prospective interventional study was conducted from August to December 2024 among rural school parents with daughters aged 8 to 14 during the Mega Parent Meet, which attracted many parents. Participants were asked to complete a self-administered questionnaire both before and after the educational intervention.

Results: 134 parents participated. Before the intervention, awareness of HPV and its vaccine was low. After the intervention, 98.5% showed improved knowledge, and vaccine acceptability increased from 81.3% to 99.3%. Moreover, 80.6% were willing to pay for the vaccine. Factors such as profession, income, and family size influenced acceptance.

Conclusion: The educational intervention significantly enhanced parental recommendations for HPV vaccination in rural areas. Post-intervention scores indicated greater knowledge, positive attitudes, and improved vaccination practices. The findings underscore the importance of structured education in raising awareness and emphasize the need for ongoing efforts, reinforcement sessions, and accessible services to maintain these improvements.

Keywords: HPV, Rural, Daughters, Vaccination, Parents, Educational intervention.

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THE DIGITAL TRANSFORMATION OF PHARMACY- LEVERAGING INFORMATICS FOR SAFER AND SMARTER HEALTHCARE

M. AMEENA THARFIYA*, E. PAVAN KUMAR

Department of Pharmacy Practice, JNTUA - Oil Technological and Pharmaceutical Research Institute, Anantapur, India.
Email: maligiliameenatharfiya@gmail.com

Abstract:

This abstract summarizes the symbiotic link between pharmacy informatics and data analytics, emphasizing their combined ability to harness data for improved patient outcomes. Pharmacy informatics focuses on the use and integration of data, information, knowledge, and technology involved with medication use processes to improve outcomes. Pharmacy informatics is found in the acute care pharmacy practice literature, and can be divided into 2 broad themes: (1) automation and other technologies for safe and efficient medication management and (2) information technology to inform and improve information management and decision making.Clinical decision support rules for medication therapy monitoring with this level of specificity are often created and managed by pharmacists because pharmacists are well versed in medication therapy management (MTM). Pharmacy informatics has prompted the definition of core competencies that promote a technologically optimized medication-use process that is safe, effective, efficient, and timely.Pharmacy informaticists support the medication-use process through best practice management of data, information, and knowledge. Pharmacy informaticists not only support and oversee the creation, application, delivery, and management of clinical information and knowledge, but they also inform how systems should be developed and why interoperability is essential to safe medication management. CDS software aids clinicians during the decision-making process by way of event-driven alerts, forcing functions, care plans, evidence-based order sets, documentation templates, and patient data summaries.In conclusion pharmacy informatics continues to grow, pharmacy technicians will continue to play an integral role at various levels of pharmacy practice. Pharmacy students must be educated in pharmacy informatics to be able to leverage existing and future tools to support medication-related care.

Keywords: Informatics, Medication Therapy Management, Automation, Evidence.

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THE AI WATCHTOWER -TRANSFORMING DRUG SAFETY WITH INTELLIGENT PHARMACOVIGILANCE"

SHAIK AKIFA KOUSAR*, E. PAVAN KUMAR

Department of Pharmacy Practice, JNTUA - Oil Technological and Pharmaceutical Research Institute, Anantapur, India.
Email: sakifasak9@gmail.com

Abstract:

Pharmacovigilance plays a critical role in ensuring drug safety by predicting, assessing, and preventing adverse drug reactions (ADRs) and medication errors. However, traditional methods often struggle with the increasing volume of real-world data, delayed reporting, and inefficiencies in risk detection. Artificial Intelligence (AI) is revolutionizing pharmacovigilance by enabling real-time surveillance, predictive analytics, and automated safety monitoring, making precision drug safety more proactive and efficient.

The AI Watchtower symbolizes a new era of intelligent pharmacovigilance, leveraging machine learning (ML), Natural language processing (NLP), and big data analytics to detect potential safety concerns earlier than conventional methods. AI can analyze vast databases from clinical trials, electronic health records, social media, and spontaneous reporting systems, identifying adverse events with greater accuracy and speed. Deep learning algorithms further enhance pharmacovigilance by recognizing patterns in adverse reactions and predicting high-risk patient groups.

Moreover, AI-driven automation streamlines adverse event reporting, minimizing human error and ensuring regulatory compliance. Intelligent pharmacovigilance systems assist healthcare professionals in risk assessment and decision-making, improving patient safety while reducing the burden on regulatory authorities. In India, where diverse healthcare challenges exist, AI-powered pharmacovigilance is essential in bridging the gap between drug safety surveillance and timely intervention.

By transforming pharmacovigilance from reactive to proactive, AI is reshaping global drug safety standards. The AI Watchtower represents a smarter, faster, and more reliable approach to safeguarding patient health, ensuring that every medication prescribed is both effective and safe.

Keywords:AI in Pharmacovigilance, Drug Safety Monitoring, Machine Learning in Healthcare, Natural language processing (NLP),Electronic health records (EHC), Predictive Analytics for Drug Safety, AI-Powered Risk Detection, Adverse Drug Reaction Surveillance.

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EFFECT OF AN EDUCATIONAL INTERVENTION ON KNOWLEDGE, ATTITUDES, AND PRACTICES REGARDING PARENTS' RECOMMENDATIONS FOR HPV VACCINATIONS FOR DAUGHTERS AGED 8 TO 14 YEARS IN SEMI-URBAN SCHOOLS: A PROSPECTIVE OBSERVATIONAL STUDY.

S. NISCHAY REDDY*, P.V. SAI SRUTHI, K. HARSHA PRIYA, M. MANOJ KUMAR

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research, Anantapur, India.
Email:snischayreddy9@gmail.com

Abstract

Background: The HPV vaccine is effective in preventing cervical cancer but the vaccination rates among girls aged 8–14 are low. Limited data exists on school-based education programs, but this study aims to assess how such interventions influence parental knowledge, attitudes, and practices (KAP) toward supporting HPV vaccination for their daughters.

Objectives: To assess the current KAP about HPV vaccination and identify factors influencing, parents' recommendations of HPV vaccination to their daughters of age 8 to 14 years.Methods: The study was a multi-school prospective observational study conducted from August to December 2024 among parents of daughters aged 8 to 14 from semi-urban schools. The parents gathered at the schools and requested to complete a self-administered questionnaire prior to and following the sessions' intervention.

Results: 114 parents participated in the study. Prior to the educational intervention, a mere 3.5% of participants were aware of the HPV vaccine. Following the intervention, there was a substantial increase in parents' knowledge regarding HPV and the availability of the vaccine, with an improvement of 100% ($p < 0.001$). Additionally, the acceptance of the vaccine for daughters increased from 87.7% to 97.4% ($p < 0.001$). In semi-urban regions, it was noted that gender significantly influenced attitudes towards HPV vaccination after the intervention ($p = 0.037$). Conversely, the profession had a marginal impact on practices prior to the intervention ($p = 0.063$), although this effect diminished in the subsequent period.

Conclusion: The educational intervention has significantly enhanced parental recommendations regarding HPV vaccination within semi-urban regions.

Keywords: HPV, Daughters, Vaccination, Acceptability, Parents, Educational intervention.

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NEXT-GEN MEDICATION THERAPY: AI-DRIVEN INNOVATIONS FOR ACCESSIBLE, AFFORDABLE, AND EFFECTIVE HEALTHCARE IN INDIA

SHAIK ASIYA BEGUM*, E.PAVAN KUMAR

Department of Pharmacy Practice, JNTUA - Oil Technological and Pharmaceutical Research Institute, Anantapur, India.
Email: sasiyabegum.ab@gmail.com

Abstract:

India faces significant healthcare challenges, including medication non-adherence, polypharmacy, and escalating treatment costs. Medication Therapy Management (MTM) is a patient-centric approach that optimizes drug therapy, reduces adverse events, and enhances adherence. However, traditional MTM methods are often resource-intensive and inefficient. Artificial Intelligence (AI) presents a groundbreaking solution by leveraging machine learning, predictive analytics, and personalized interventions to revolutionize MTM in India.AI-driven solutions transform adherence management through real-time monitoring, intelligent reminders, and virtual pharmacist consultations, ensuring patients follow prescribed regimens. Natural Language Processing (NLP) and AI-powered chatbots provide round-the-clock patient support, addressing medication-related queries and side effects proactively. Additionally, AI-based predictive analytics can identify patients at high risk of non-adherence, enabling early interventions.Beyond adherence, AI optimizes cost reduction strategies by analyzing prescribing patterns, recommending affordable yet effective alternatives, and preventing unnecessary hospitalizations due to medication errors. AI-integrated decision support systems assist healthcare providers in selecting the most suitable treatment plans, ensuring both efficacy and affordability. Moreover, AI enables automated drug interaction detection, reducing adverse effects and improving patient safety.India's rapid adoption of digital health technologies helps in integrating AI with MTM, India can achieve personalized, cost-effective, and efficient medication management, leading to improved health outcomes and reduced economic burdens. AI-driven MTM is not just a technological advancement—it is a revolutionary shift toward accessible, affordable, and quality healthcare for all.

Keywords: Artificial Intelligence in Healthcare,Medication Therapy Management (MTM) Medication Adherence,Predictive Analytics in Medicine,Cost-effective Drug Therapy,AI-powered Digital Health Solutions.

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EFFECT OF EDUCATIONAL INTERVENTION ON KNOWLEDGE, ATTITUDES, AND PRACTICES CONCERNING PARENTAL RECOMMENDATIONS FOR HPV VACCINATIONS IN DAUGHTERS AGED 8 TO 14 YEARS IN URBAN SCHOOLS: A PROSPECTIVE OBSERVATIONAL STUDY.

K. HARSHA PRIYA*, S. NISCHAY REDDY, P.V. SAI SRUTHI, M. MANOJ KUMAR

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research, Anantapur, India.
Email:priyakaditham08@gmail.com

Abstract

Background: The HPV vaccine prevents cervical cancer and other illnesses, but vaccination rates for girls aged 8 to 14 are low. Limited data exist on school education programs; however, this study suggests that such interventions can enhance parental knowledge, attitudes, and practices (KAP). This research will assess the impact of educational interventions on parents' understanding of HPV vaccination daughters.Objectives: To assess the current knowledge, Attitude and Practices about HPV vaccination among parents having daughters of age 8 to 14 years. To identify factors influencing, parents' recommendations of HPV vaccination to their daughters.

Methods: The present study designed as a multi-school prospective observational study conducted from August to December 2024, involving parents of daughters aged 8 to 14 years from urban settings. Participation solicited from parents who assembled in schools during parent-teacher interactive sessions. Parents requested to complete a self-administered questionnaire both prior to and subsequent to the intervention.

Results: 114 parents participated in the study. Before the intervention, only 5.3% were aware of HPV, and 11.4% knew about the vaccine. Following the intervention, parents' knowledge increased to 99.1% for HPV and 100% for the vaccine ($p < 0.001$). Vaccine acceptability rose from 49.1% to 100% ($p < 0.001$). Education, profession, and income levels significantly influenced vaccine acceptance. Individuals with higher education levels, those in healthcare professions, and those in higher-income groups demonstrated a greater likelihood of adopting vaccination practices.

Conclusion: The educational intervention significantly improved parental knowledge and attitudes towards the HPV vaccination. While urban parents had higher initial awareness, the intervention still enhanced their KAP. To maintain these gains, continuous educational initiatives, access to credible vaccine information, and collaboration with healthcare professionals are essential.

Keywords: HPV, Urban, Vaccination, Acceptability, Parents, educational intervention.

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ASSESSMENT OF KNOWLEDGE, ATTITUDES, AND PRACTICES TOWARD DENGUE FEVER AMONG SCHOOL STUDENTS IN CHITRADURGA, INDIA: A PRE-POST INTERVENTIONAL STUDY

SHIRISH INAMDAR*[1], M. MANOJKUMAR[2]

[1]Assistant professor, Krishna Vishwa Vidyapeeth (Deemed to Be University) Krishna Institute of Pharmacy, Karad, India, [2]Associate professor, Department of Pharmacy Practice Raghavendra Institute of Pharmaceutical Education and Research, Anantapur, India. Email: shirish8888@gmail.com

Abstract:

Background:Dengue fever is a rapidly spreading mosquito-borne viral infection, especially prevalent among school-aged children in urban and semi-urban regions of India. The Aedes mosquito, responsible for transmission, thrives in climatic conditions common to these areas. Enhancing awareness and preventive behaviors through educational interventions remains a crucial strategy for dengue control.

Objective:To assess the knowledge, attitudes, and practices (KAP) regarding dengue fever among middle school students and evaluate the impact of a structured health education program.

Methods:A school-based, pre-post interventional study was conducted from January to June 2024 in Chitradurga, Karnataka. A total of 561 students from grades 8 to 10 in English and Kannada medium schools were selected using a total enumeration sampling technique. Data were collected using a validated structured questionnaire in the pre-test phase. A dengue-specific teaching program was then administered, followed by a post-test one month later using the same tool. Data were analyzed using SPSS version 30.0. Paired t-tests were used to compare pre- and post-intervention scores, with significance set at $p < 0.05$.

Results:Of the 561 participants, 61% were female and 39% male; 389 students were from English-medium schools and 172 from Kannada-medium schools. Prior to the intervention, 91.14% were aware of the dengue virus, 84% could identify symptoms, and 91.4% recognized mosquito breeding sites. Health department staffs were the main source of information (39.2%), followed by newspapers (23.5%), television/radio (21.7%), and peers/family (15.5%). Post-intervention analysis revealed a statistically significant improvement in overall KAP scores across both language groups ($p < 0.05$).

Conclusion:The study demonstrates that structured educational interventions can significantly enhance school students' awareness and preventive behaviors related to dengue fever. Incorporating health education modules into school curricula and conducting periodic community-based awareness drives may play a vital role in sustaining dengue prevention efforts.

Keywords: Dengue fever, Knowledge, attitude, and practice (KAP),School-based intervention, Health education,Aedes mosquito.

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OBSERVATIONAL STUDY TO EVALUATE CLINICAL PROFILE, OUTCOMES AND DIAGNOSTIC ACCURACY OF NON-INVASIVE TESTS INCLUDING PLATELET COUNT METHODOLOGIES IN COMPENSATED ADVANCED CHRONIC LIVER DISEASE (cACLD) PATIENTS AT A TERTIARY CARE HOSPITAL

NAAZ SULTANA*, MOHAMMED MALIK AHMED, AMANULLA PATHAN

Department of Pharmacy Practice, Anwar-ul-Uloom College of Pharmacy, New Mallepally, Hyderabad, India.
Email: nzsultana23@gmail.com

Abstract

Background: Compensated advanced chronic liver disease (cACLD) is characterized by advanced fibrosis with intact liver function. Early detection by non-invasive tests (NITs) is essential in an effort to prevent disease progression.

Objective: To evaluate the clinical presentation, etiology, complications, and diagnostic value of NITs in cACLD, and to compare platelet counts by manual and automated platelet counting in the calculation of FIB-4 and APRI scores.

Methods: Cross-sectional observational study in a South Indian tertiary care center was employed. Adults diagnosed with cACLD by transient elastography were considered. Demographics, etiology, comorbidities, liver function tests, manual and automated platelet count, and imaging findings (CAP, KPA, MRE) were gathered. FIB-4 and APRI scores were calculated and correlated with clinical severity markers.

Results: Metabolic dysfunction-associated steatotic liver disease (MASLD) was the most frequent etiology (42%), followed by alcoholic liver disease (31%). Severe complications included portal hypertension, varices, and ascites. Platelet counts manually were always lower than automated counts, affecting fibrosis risk classification in a maximum of 25% of the cases. Liver stiffness measures (KPA, MRE) were strongly correlated with serum albumin, INR, and platelet count. MASLD patients had high CAP scores for steatosis.

Conclusion: APRI and FIB-4 are excellent NITs for assessing cACLD severity. However, variation in platelet counting methods has a significant effect on risk stratification and diagnostic sensitivity.

Keywords:cACLD, Hepatic fibrosis, Non-invasive tests, FIB-4, APRI, Platelet count, MASLD, Portal hypertension, Liver stiffness.

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EFFICACY OF PRE EMPTIVE ANALEGISA ON POST OPERATIVE PAIN AND OPIOID CONSUMPTION IN PATIENTS UNDERGOING MAJOR ORTHOPEDIC SURGERIES

JUVERIA TAZEEN*, AYESHA MUSKAN,PATHAN AMANULLA KHAN

Department of Pharmacy Practice, Anwarul Ul Uloom College of pharmacy, New Mallepally, Hyderabad, India.
Email: tazeenjuveria04@gmail.com

Abstract:

Background: The purpose of this study is to evaluate the combined efficacy of pre-emptive analgesia using oral pregabalin (150mg) and intravenous paracetamol (1gm) in managing postoperative pain and reducing opioid consumption.

Objective: To assess the cumulative amount of opioid consumption during 48 hours post-operatively, pain intensity, request for the first rescue analgesic, and adverse effects related to analgesic and opioid regimens, which were serially assessed during the 12 hours post-operatively.

Methods: This is "randomized single blinded" case control study. It was performed on 82 patients undergoing major orthopaedic surgeries. Patients were randomly allocated to even and odd group as case and control groups respectively. Case group received I.V paracetamol 1gm and oral pregabalin 150mg 2hours before anaesthetic induction, control group received only standard post-operative treatment. In both groups, patients were evaluated for pain scores at 2, 6, 8, 12, 24, and 48 hours after surgery.

Result: The case group demonstrated consistently lower visual analogue pain scores across all time points compared to the control group. Additionally, there was a noticeable reduction in postoperative nausea, vomiting, and sedation at 6 and 12 hours in the case group. Opioid usage was also reduced, with 35.29% receiving tramadol and 2.9% receiving fentanyl injections, and no use of transdermal patches. In contrast, the control group had higher tramadol use (58.82%), identical fentanyl injection use (2.9%), and greater reliance on fentanyl (8.82%) and buprenorphine (2.94%) patches.

Conclusion: A single pre-operative dose of I.V Paracetamol 1gm and oral Pregabalin 150mg is an effective method for reducing post-operative pain opioid consumption in patients undergoing major orthopaedic surgeries.

Keywords: Pre emptive analgesia, Pain intensity, Opioid consumption, Rescue analgesic

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SAFETY AND EFFICACY OF SHORTER ORAL BEDAQUILINE REGIMEN IN MULTI-DRUG-RESISTANT TUBERCULOSIS

SYED MUJEEB AKTHAR*, MOHAMMED ABDUL HAKEEM, SHAIK SHOAIB FAHAD AND AMANULLAH PATHAN

DepartmentofPharmacyPractice,Anwar-ul-Uloom CollegeofPharmacy,Hyderabad, India.
Email: mohammedabdulhakeem333@gmail.com

Abstract:

Background: Around the world, tuberculosis (TB) remains a major infectious problem, MDR-TB or multi-drug-resistant TB being one of its most serious public health threats. MDR-TB is particularly challenging because of its resistance to critical medications, rifampicin and isoniazid, which necessitates long, complicated, and toxic treatments. To combat this, the World Health Organization (WHO) suggests using bedaquiline in short, fully oral regimens. More programmatic research is needed into their effectiveness and safety.

Objective: To investigate the safety and efficacy of using an oral bedaquiline-based regimen for treating MDR-TB.

Method: This retrospective study will be conducted over six months at Government General and Chest Hospital, Hyderabad. Participants will consist of adults aged 18 to 45 years with confirmed MDR-TB and treated with a shorter oral regimen of bedaquiline, levofloxacin, clofazimine, ethambutol, isoniazid, pyrazinamide, ethionamide, pyridoxine. Data collection will include treatment records and electronic medical record (EMR) databases as well as hospital registries. Primary outcomes consist of treatment success (cure, completion), failure, mortality, ADRs, and relapse rates between 6 months to 12 months post treatment. Patients with XDR-TB, along with severe liver disease, incomplete records, or lost to follow up will be excluded.

Result: This study seeks to collect real-world data on treatment results, ADR frequency and type, and relapse rates. It will assist in evaluating if shorter, fully oral regimens are a safe and effective alternative to lengthy or injectable therapies.

Conclusion: Data from this study has the potential to improve treatment strategies for MDR-TB, enhancing patient compliance while minimizing side effects. As a result, there might be greater endorsement for the use of shorter oral regimens in regions where MDR-TB is prevalent.

Keywords: MDR-TB, Bedaquiline, Shorter Oral Regimen, Tuberculosis, Safety, Efficacy, Treatment Outcomes.

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SAFETY ASPECTS OF DELAMANID: A REAL-WORLD DISPROPORTIONATE ANALYSIS OF THE FOOD AND DRUG ADVERSE EVENT REPORTING SYSTEM (FAERS) DATABASE

K. RENUSHREE*, M. MANOJ KUMAR

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)- Autonomous, Chiyyedu post, Ananthapuramu, India. Email: vannnappa@gmail.com

Abstract:

Introduction: Delamanid is a drug that is employed for the treatment of MDR-TBReal-world studies on the safety of delamanid in large populations are lacking. This study aimed to determine the adverse events associated with delamanid in real-world settings by analysing data from the US Food and Drug Administration (FDA) Adverse Event Reporting System (FAERS).

Objectives:Safety aspects of Delamanid: A real-world disproportionate analysis of the Food and Drug Adverse Event Reporting System (FAERS) database.

Methods:We retrospectively extracted the reports on adverse drug events (ADEs). By using disproportionality analysis including reporting odds ratio (ROR), proportional reporting ratio (PRR), and relative reporting ratio (RRR). we evaluated whether there was a significant association between delamanid and ADE.

Results: Top 50 significant adverse events of delamanid were identified, including some common adverse events such as phobia (RRR 2.25, ROR 2.25, PRR 1.99), uveitis (RRR 3.34, ROR 3.34, PRR 1.99), Hepatic cytolysis PRR (1.9), ROR (2.14), RRR (2.14),), Acute coronary syndrome ROR (4.29), PRR (3.19), RRR (4.29), Abortion induced PRR (1.91), ROR (2.14), RRR (2.14), Erectile dysfunction ROR (2.21), RRR (2.21), PRR (1.96). The proportion of hospitalization is 2.90%.

Conclusion:The results of our study provide valuable insights for optimizing the use of delamanid and reducing potential side effects, expected to facilitate the safe use of delamanid in clinical settings.

Keywords: Delamanid, FAERS database, Disproportionate analysis.

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INHALED INSULIN (AFREZZA): A REVIEW ON ITS ROLE IN GLYCEMIC CONTROL AND PATIENT COMPLIANCE IN DIABETES MANAGEMENT

K. SUPRIYA*, M. MANOJ KUMAR, S. B. AROMAL

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur, India. Email: kanalasupriyareddy@gmail.com

Abstract:

Background: Diabetes mellitus is a chronic metabolic disorder marked by persistent hyperglycaemia due to impaired insulin secretion, insulin action, or both. Conventional insulin therapy often faces limitations related to injection discomfort, fear, and compliance issues, prompting the need for alternative delivery systems.

Objectives: To review the role of inhaled insulin (Afrezza) in improving glycemic control and adherence in diabetes care, focusing on its pharmacokinetics, clinical efficacy, safety, and usability in diverse patient groups.Methodology: A comprehensive literature review was conducted using peer-reviewed clinical trials, FDA guidelines, prescribing data, and international diabetes care standards to evaluate Afrezza's clinical value.

Results: Afrezza, a rapid-acting inhaled insulin approved by the FDA in 2014, has shown efficacy in controlling postprandial glucose levels in type 1 and type 2 diabetes. Clinical trials involving over 3,000 adults have supported its effectiveness and safety. As a needle-free alternative, it offers improved convenience and may enhance adherence. However, Afrezza is contraindicated in patients with asthma, chronic obstructive pulmonary disease (COPD), and in individuals under 18. Pulmonary function testing is essential before initiation, and individualized dosing is required for optimal effect.

Conclusion: Afrezza presents a novel, non-invasive insulin option that provides rapid glycemic control and may improve patient compliance, particularly among those reluctant to use injections. Despite its advantages, its use is restricted by pulmonary contraindications and necessitates careful screening and monitoring to ensure safety and efficacy.

Keywords: Inhaled insulin, Afrezza, Diabetes mellitus, Glycemic control, Pulmonary administration

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IMPACT AND OUTCOMES OF PLATELETS ON NON–INVASIVE MARKERS IN COMPENSATED ADVANCED CHRONIC LIVER DISEASE [CACLD] PATIENTS

MOHD MALIK AHMED*, NAAZ SULTANA, PATHANAMANULLAKHAN

DepartmentofPharmacyPractice,Anwar-Ul-Uloom CollegeofPharmacy,Hyderabad, India. Email: malik16042000@gmail.com

Abstract

Background: Compensated advanced chronic liver disease (cACLD) represents a critical phase in chronic liver disease marked by considerable fibrosis without signs of clinical decompensation. Understanding its clinical characteristics is essential for enhancing early detection and preventing complications such as hepatic decompensation or hepatocellular carcinoma (HCC).

Objectives: To compare platelet counts measured through manual microscopy and those acquired from automated hematology analyzers in populations from the northeast and south, as well as to assess how variations in platelet counts influence the APRI and FIB-4 scores alongside other non-invasive markers, such as FIBROSCAN.Methodology: This was a prospective cross-sectional observational study conducted on 100 patients satisfying the inclusion and exclusion criteria. Data on liver function tests, platelet count, and non-invasive fibrosis scores (FIB-4, APRI, FIBROSCAN) were collected and were statistically analyzed.

Results: In a sample of 100 patients, the mean age was 52 years with a standard deviation of 10 years, with males (75%) and females (25%). Lab findings showed a discrepancy between the platelet count from manual microscopy (148 x 10^9/L) and that from an automated hematology analyzer (142 x 10^9/L) in the northeast population compared to the south population, along with elevated liver enzyme AST levels (62.3>48, in 55 patients) and reduced ALT levels (47.2<50, in 81 patients) alongside thrombocytopenia (low platelet count of 104 x 10^9/L<150 x 10^9/L, in 43 patients). The differences in non-invasive indicators, such as the APRI (1.95>1.5, in 88 patients) and FIB-4 (2.53>1.3, in 84 patients) scores, are linked to the variations in both manual microscopy and automated platelet counts. This subsequently affects the FIBROSCAN outcomes (26.44>10 kPa) and contributes to the onset of compensated advanced chronic liver disease (cACLD).

Conclusion: Diagnostic non-invasive tools are an important part of the management of cACLD. Earlydetectioncanavoiddecompensationanddirectimprovedclinicalstrategiesintertiarycare.

Keywords: Compensated advanced chronic liver disease(cACLD), clinical profiles, liver function test, MASLD, non-invasive markers, FIBROSCAN, platelet count, FIB-4, APRI

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DEVELOPMENT AND CHARACTERIZATION OF FENOFIBRATE BETA-CYCLODEXTRIN INCLUSION COMPLEX LOADED UFASOMES: A QUALITY BY DESIGN APPROACH

Y. SRAVANI, M. YASWANTH*, J. RAJASEKHAR REDDY, J. SNEHA, B. KEERTHI SAHANA, K. SIREESHA

Department of Pharmaceutics, Raghavendra Institute of Pharmaceutical Educational and Research (RIPER)- Autonomous, Ananthapuramu, India. Email: yaswanthmallisetty55@gmail.com

Abstract

Background: Fenofibrate is a commonly used lipid-lowering agent for managing Hyperlipidemia. However, its clinical effectiveness is hampered by poor aqueous solubility and low oral bioavailability. These limitations necessitate innovative drug delivery strategies to improve its pharmacokinetic profile and therapeutic performance.

Objectives: This study aims to enhance Fenofibrate's solubility and oral bioavailability by formulating a novel delivery system. The approach involves incorporating β-cyclodextrin (β-CD) inclusion complexes of Fenofibrate into ufasomes vesicular carriers composed of unsaturated fatty acids using a Quality by Design (QbD) framework for systematic optimization.

Methodology: Fenofibrate was complexed with β-CD using a physical mixing method. The formation of the inclusion complexes was confirmed via FTIR and DSC studies. These complexes were then encapsulated into ufasomes prepared by the thin-film hydration technique using soya lecithin, sodium oleate, and Span 20. A Central Composite Design (CCD) was applied to optimize formulation variables such as lipid and surfactant concentrations, targeting critical quality attributes like vesicle size, PDI, and zeta potential. *In vitro* drug release studies for the optimized formulation were conducted for 12 hours.

Results: The β-CD inclusion complex shows enhanced solubility and the optimized Fenofibrate β-CD inclusion complex loaded ufasomes. The optimized formulation showed desirable physicochemical properties, including uniform vesicle size of 617nm, favorable zeta potential of -44 mV, and %EE of 90.9±1.3. Morphological evaluation using SEM and TEM revealed spherical vesicle structures. *In-vitro* release studies showed a sustained release in 12 hrs in phosphate buffer at pH 7.4 and obtained improved drug release compared to unformulated Fenofibrate, indicating enhanced solubility and dissolution.

Conclusion: Combining β-CD inclusion complexation with ufasomal encapsulation effectively improved Fenofibrate's solubility, permeability, and stability. This QbD-driven formulation strategy offers significant potential for the oral delivery of poorly water-soluble drugs and supports future translational and clinical development.

Keywords

Fenofibrate, β-Cyclodextrin, Ufasomes, Quality by Design, Oral Bioavailability, Central Composite Design.

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ENHANCING BIOAVAILABILITY AND COMBATING DRUG-RESISTANT TUBERCULOSIS USING INHALABLE DRY POWDER MICROPARTICLES OF CHITOSAN-ENCAPSULATED WITH DUAL-DRUG STRATEGY

BHARATH GOWDA K S, MALLAMMA T*, PRAKASH GOUDANAVAR

Assistant Professor, Department of Pharmaceutics, Sri Adichunchanagiri College of Pharmacy, Adichunchanagiri University, B G nagara, India.

Abstract

Background: Tuberculosis (TB) is the second leading infectious killer in the world after COVID-19. Emerging strains of multidrug-resistant (MDR) and extensively drug-resistant (XDR) tuberculosis (TB) highlight the need for novel therapeutic strategies to enhance treatment efficacy and patient wellbeing.

Objective: In this study, we aimed to formulate curcumin (Cur) and linezolid (Lzd) microparticles (MPs) for an improved pulmonary drug delivery and therapeutic response against TB by dry powder inhalation (DPI).

Materials and Methods: Microparticles were synthesized using a Ionic Gelation method followed by spray-drying method. Curcumin was chosen for its anti-inflammatory, antioxidant, and antimicrobial effects as a nutraceutical. Cur was coated with a chitosan shell for increased bioavailability. The optimal feeding conditions were found at an inlet temperature of 160°C, aspiration rate of 90% and feed rate of 3 mL/min.

Results and Discussion: The optimized formulations exhibited high entrapment efficiencies (85.2% for Lzd and 78.6% for Cur), and their mean particle size (3.7µm) will be able to deposit into the deep lungs due to the uniform spherical morphology. The flowable aerosolization metrics (Carr's index: 24.2%, Hausner's ratio: 1.32) were excellent. In vitro studies revealed a prolonged release profile for over 14 h, as well as Anti-TB activity towards the H37 RV TB strain & significant zone of inhibition assay. A pharmacokinetic study in vivo showed a 55.2% increase in bioavailability of Lzd-Cur DPI more than oral Lzd (1.25-fold) and Lzd-only inhalation (1.4-fold).

Conclusion: Dual-drug DPI formulations represent a novel drug delivery approach for pulmonary targeting during TB therapy leading to improved bioavailability, reduced systemic toxicity, and enhanced therapeutic efficacy.

Key words Linezolid; Microparticles; Spray Dryer; Curcumin; Tuberculosis; multidrug-resistant; Dry Powder Inhalers.

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A STUDY ON ANALGESIC PRESCRIBING PATTERN IN POST-OPERATIVE PAIN MANAGEMENT IN SURGICAL DEPARTMENT OF TERTIARY CARE HOSPITAL

SOWNDHARYA NC*, BHANUJA SHAKTHI MC, UMEA HANI B, SYED FOWZAN, MOHAMMED THOUFIQ ALI

Department of Pharmacy Practice, Sree Siddaganga College of Pharmacy, Tumkur, Karnataka, India.
Email: sonuhemac89@gmail.com

Abstract

Background: Pain management is crucial aspects of postoperative care and effective analgesics enhances patient recovery and wellbeing. The pattern and practices of analgesics prescribed can greatly influence patient pain management and essential to understand current trends and practices in postoperative care.Objectives: To assess the prescribing pattern and effectiveness of analgesics in post- operative patient under different surgical specialties by using 4-point verbal rating scale (VRS).

Methods: The study was prospective observational, conducted for 6 months in Siddaganga Medical College & Research Institute, Tumkur. A total of 130 adult patients belongs to surgical department of general (83), orthopedics (43) and ENT (4) were included in the study. The demographic and treatment details were obtained from patients record using predesigned data collection form and analyzed the level of pain through verbal rating scale (VRS). Among the study participants, patients were prescribed with mono therapy (64 %, paracetamol) dual therapy (22 %, paracetamol and diclofenac etc), triple therapy (11 %) and quadruple therapy (3 %).

Results: Patients pain experience was as follows; Day 1: 89 % patients experienced severe to moderate, Day 2 & 3: 86 & 78 % patients experienced moderate to mild pain, Day 4: 94 % patients experienced mild to no pain, Day 5: 94 % patients experienced no pain. The intensity of pain gradually reduced over the time. Almost 94 % of patients expressed excellent and good satisfaction score with prescribed analgesics.

Conclusion: Paracetamol was the most prescribed medication and patients expressed severe-moderate pain on day one with excellent satisfaction score with prescribed analgesics. Chi square test applied using social science statistics software revealed that there was no association between various demographic variables on the intensity of pain and on the satisfaction score with the analgesics prescribed.

Keywords: Analgesic, Prescribing pattern, post-operative care, Pain Management.

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PREVALENCE OF CARBONATED DRINK CONSUMPTION AND AWARENESS OF ITS HEALTH EFFECTS AMONG PHARMACY STUDENTS: AN INTERVENTIONAL STUDY

K. SRAVANI

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur, India.Email: kopeerlashravani@gmail.com

Abstract

Background: Students commonly consume carbonated drinks, often without full awareness of their health effects. This study examines consumption patterns and assesses the impact of an awareness intervention on pharmacy students.

Objectives: This study aims to assess the prevalence, influencing factors, and health awareness of carbonated drink consumption, and evaluate the impact of an educational intervention among pharmacy students.

Methods: A six-month pre-post quasi-experimental study was conducted at RIPER-Autonomous, Anantapur, involving pharmacy students aged 17 to 26 years (n=391 participants) to assess the consumption and awareness of the health effects of carbonated drinks.

Results: The majority of participants (341/391) reported consumption of carbonated beverages, with a notably higher daily intake among males (82.6%) compared to females (17.4%). Following the intervention, scores for knowledge and attitudes exhibited a significant increase, whereas practice scores experienced a notable decline from 2.71 to 2.1 ($p < 0.001$).

Conclusion: The intervention significantly improved knowledge and attitudes; however, practice scores declined, indicating limited behavioral change despite increased awareness among students.

Keywords: Carbonated drinks, Prevalence, Health awareness, Consumption patterns, Pharmacy students, educational intervention, Behavioural change.

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TRANSFORMING CANCER CARE WITH INNOVATIVE MONOCLONAL ANTIBODIES – A TARGETING APPROACH

MEGHA S ARALI

Department of Pharmacy Practice, Sree Siddaganga College of Pharmacy, Tumkur - 57203, Karnataka, India.
Email:meghaarali2@gmail.com

Abstract

Various treatments for different cancers, such as immunotherapies, precision medicine, radiation therapy, chemotherapy and surgery exist today; however, newer treatment pathways, more specific and potent for eliminating cancer cells remain a top priority. In search of that, research gone through the utilization of developed monoclonal antibodies that were similar & produced in a laboratory discovered by Kohler and Milstein by hybridoma technology in 1975. Modification of monoclonal antibodies is uniquely engineered to selectively bind to cancer antigens, thus enabling precise targeting of tumor cells. These types of antibodies activate the immune system to initiate innate immune responsessuch asantibody-dependent cellular cytotoxicity (ADCC), complement-dependent cytotoxicity (CDC) and antibody-dependent cellular phagocytosis (ADCP). A German physician postulated a *Magic Bullet* that describes the anti-tumor effect of an antibody through an antibody-drug conjugate (ADC) that delivers small molecule cytotoxic drugs directly to target cancer cells and induces their apoptosis.With their versatility and specificity, monoclonal antibodies have transformed cancer treatment and become a valuable treatment tool for physicians in combating complex medical challenges. Johnson *et al*. (2024) conducted a clinical trial on the next-generation antibody-drug conjugate (ADC) that resulted in tolerability and safety profiles in patients with refractory hematologic malignancies. The present review mainly focuses on the anti-tumor effect / target-specific effects of antibodies on tumor cells. 10 ADCs have been approved by US Food and Drug Administration (FDA) for treatment of cancer. Herceptin (trastuzumab) is a pioneering monoclonal antibody specifically designed for HER2-positive breast cancer, marking a significant breakthrough in cancer immunotherapy. The unique combination of mechanism of action and target specificity of monoclonal antibody distinguishes from chemotherapy, enabling a potent antitumor response while minimizing toxicity and adverse effects. As a key approach in cancer treatment, monoclonal antibody therapy has emerged as a highly customized strategy, aligning with the broader trend in oncology toward targeted therapies and personalized medicine.

Keywords: Monoclonal antibody, antibody-drug conjugate, target specific effect, anti-tumor effect.

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A RETROSPECTIVE STUDY ON THERAPY-RELATED FEBRILE NEUTROPENIA IN LYMPHOMA PATIENTS TREATED WITH PEG-FILGRASTIM AT A SINGLE CENTRE (FN-PEG STUDY)

ATHIFASULTHANA*, MOHAMMED MUKARRAM AHMED*, PATHAN AMANULLA KHAN

Department of pharmacy practice, Anwarul Ul Uloom College of pharmacy, New Mallepally, Hyderabad, India.
Email: athifas85@gmail.com

Abstract

Background: Febrile neutropenia (FN) is a serious complication in lymphoma patients receiving chemotherapy, leading to higher morbidity, hospitalizations, and treatment delays. Peg filgrastim, a PEGylated granulocyte colony-stimulating factor, is commonly used for prevention, but real-world evidence on its effectiveness in lymphoma care is still scarce.

Objectives: The study primarily aims to evaluate the incidence of therapy-related febrile neutropenia (FN) in lymphoma patients receiving peg filgrastim. Secondary objectives include measuring neutropenia duration (with and without peg filgrastim), analysing FN-related hospitalizations, and examining chemotherapy dose reductions due to neutropenia.

Methods: This retrospective cohort study reviewed medical records of lymphoma patients (>18 years) diagnosed between 2022 and 2024 at a single centre. Patients were categorized based on the use of peg filgrastim. Febrile neutropenia (FN) was defined per ASCO criteria: a single oral temperature ≥101°F (38.3°C) or sustained temperature ≥100.4°F (38°C) with absolute neutrophil counts below 500 cells/mm^3. Statistical analyses included the Kolmogorov-Smirnov test for distributions, Mann-Whitney U for continuous variables, and Chi-square/Fisher's exact tests for categorical data.

Results: Peg filgrastim prophylaxis is expected to lower FN incidence, shorten neutropenia duration, reduce FN-related hospitalizations, and minimize chemotherapy dose modifications. These outcomes offer valuable insights for improving supportive care in lymphoma patients undergoing chemotherapy.

Conclusion: This study aims to highlight peg filgrastim's role in reducing FN complications in lymphoma patients. By utilizing real-world evidence, it seeks to refine treatment protocols, improve patient outcomes, and optimize healthcare resources.

Keywords: Febrile Neutropenia (FN), Lymphoma, Peg-filgrastim prophylaxis, Granulocyte Colony-Stimulating Factor (G-CSF), Hospitalization Rates, Chemotherapy Dose Reduction.

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ASSESSMENT OF QUALITY OF LIFE AMONG INFORMATION TECHNOLOGY PROFESSIONALS EXPERIENCING EPISODES OF MIGRANE

DR PRIYANKA N*, MOULYA PB, PRIYA ARTHI J M, PRIYANKA S UDIGERE, SAMBHRAMA H.

Department of Pharmacy Practice, Nargund College of Pharmacy, Bangalore, India.Email: priyaraji.cta@gmail.com

Abstract

Background: Migraine headache is a neurological disorder estimated that it affects approximately 1 in 7 people globally. In addition to the physical symptoms, migraine can also have a significant impact on an individual's emotional and social well-being, leading to reduced quality of life. Lack of awareness lead to misdiagnosis, delayed treatment, and increased burden on individuals and healthcare systems. IT professionals, may be more susceptible to migraine due to their working pattern. Objectives: To assess prevalence, knowledge regarding Migraine. To assess the quality of life with respect to the different domains.

Method: This prospective cross-sectional study was conducted in two rounds. Ethics approval was obtained prior to the commencement. Participants were randomly selected to participate in the survey, and a standardized questionnaire was administered. The questionnaire had three sections, including demographic information, self-opinions, prevalence and knowledge based validated questionnaire to assess their health-related quality of life. Data collected were analysed using Microsoft Excel and SPSS software.

Results: The study included 136 subjects, and the prevalence rate of migraine headache was found to be 24.26%. The study revealed a significant lack of knowledge about migraine headache, with only one subject having adequate knowledge while 34 and 101 subjects had moderate or inadequate knowledge about migraine headache respectively. Migraine negatively impacted various activities or feelings, with the highest score. The study identified some differences in quality of life under the Emotional Function.

Conclusion: The study also sheds light on the unique challenges faced by IT professionals, who may be more susceptible to migraine due to work-related factors. By identifying these challenges and highlighting the need for targeted interventions, we can work towards improving the quality of life of this group.

Keywords: Migraine Headache, Prevalence, Health related Quality of life, IT professionals.

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A STUDY TO ASSESS THE KNOWLEDGE, AWARENESS AND PREVALENCE OF POLYCYSTIC OVARIAN SYNDROME AMONG YOUNG WOMEN

PRIYA ARTHI*, PRIYANKA S UDGIRE, RANJITHA, SAMBHRAMA.H, DHRUVA NARAYAN K, PRIYANKA N

Department of Pharmacy Practice, Nargund College of Pharmacy, Bangalore, India. Email: priyaraji.cta@gmail.com

Abstract

Background: Polycystic ovarian syndrome (PCOS) is a hormonal disorder which is characterized by elevated androgen level which leads to enlarging ovaries with small cysts on the outer edge. The main reason of PCOS involves both environment and genetic factors. PCOS shows main symptoms of irregular menses, hyperandrogenism and polycystic ovaries. During the early puberty years symptoms of PCOS arise. Type 2 diabetes, Thyroid disease and gestational diabetes are the main risk factors of PCOS.

Objectives: The objective of the study is to determine the prevalence of PCOS and to provide awareness regarding PCOS and to assess the knowledge gained about PCOS through health education session and provide self-education among young women.Methodology: This is a cross-sectional study on PCOS among young women in Bangaluru, carried out for a period of 6 months. The participants have provided the response using google form and the data on demographic details, lifestyle modification and knowledge regarding PCOS were collected. Informed consent was obtained from all the participants. The subject was provided with the link of questionnaire, which comprised of 4 sections.

Results: Before the study, it was found that knowledge regarding PCOS among the participants was 41.4%. Majority of the respondents 114 (50%) were belonging to the age ranging between 22-25 years. The mean body weight of the study participants was found to be 55.24±10.59 kgs. After the educational,the knowledge was increased to 69.04%.

Conclusion: PCOS is a rising concern in the life of today's women. Globally, prevalence of PCOS estimates to be higher because of life style changes. Due to lack of awareness many women are facing PCOS and its future complications. So, this is an informative study which can serve the purpose of providing detailed information about PCOS.

Keywords: Polycystic ovarian syndrome, knowledge regarding PCOS, risk factors, Prevalence.

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AZETIDINONES AGAINST TB: FROM DOCKING TO BIOACTIVITY

D. SRAVANI*, SINGIRISETTY TRIVENI, G. VISHNUVARDHAN, K. SHESHADRI,

Department of Pharmaceutical Chemistry, Raghavendra Institute of Pharmaceutical Education and Research, Ananthapuramu, Andhra Pradesh, India. Email: sravanidasari4321@gmail.com

Abstract

Background: Tuberculosis (TB), caused by *Mycobacterium tuberculosis*, remains a major global health concern, worsened by the rise of multidrug-resistant (MDR) and extensively drug-resistant (XDR) strains. Polyphosphate kinase 2 (PPK2), an enzyme essential for bacterial virulence and ATP synthesis, has emerged as a novel therapeutic target.

Objectives: This study aimed to design, synthesize, and evaluate azetidinone derivatives as potential PPK2 inhibitors for anti-TB therapy.

Methodology: Homology modelling of the PPK2 protein was performed using Schrodinger Prime, followed by molecular dynamics simulations for validation. A library of Schiff bases and azetidinone derivatives was virtually screened using Glide docking. Lead compounds were synthesized, purified, and characterized by FT-IR, ^{1}H NMR, 13C NMR and mass spectrometry. Antitubercular activity was evaluated via the broth dilution method against *M. tuberculosis* H37Rv.

Results: Docking results revealed that several Schiff bases and azetidinones demonstrated strong binding affinity and favourable glide energies, comparable to known PPK2 inhibitors and standard TB drugs. Nine Schiff bases and their corresponding azetidinones were synthesized and structurally confirmed. Compounds B1 and B3 showed MIC values of 62.5 µg/mL, while azetidinones BA1 and BA6 exhibited MICs of 250 µg/mL. BA3, BA7, and BA9 showed moderate activity at 500 µg/mL.

Conclusion: The synthesized azetidinone derivatives exhibited promising antitubercular activity and strong binding to the PPK2 active site, highlighting their potential as lead compounds for further development. These findings support the role of PPK2 as a viable drug target and contribute to ongoing efforts in combating TB and drug resistance.

Key words: Homology modeling, Molecular Docking, Poly phosphate kinase, antitubercular activity

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EFFECTIVE TELEMEDICINE INTERVENTION IN MANAGING BIPOLAR DISORDER WITH PSYCHOTIC FEATURES: A CASE REPORT

J.U.NIKITHA BAI

Department of Pharmacy Practice, Raghvendra Institute of Pharmaceutical Education and Research, Ananatpur-515721, Andhra Pradesh, India. Email: nikithabai1715@gmail.com

Abstract

This case report highlights the successful management of a 26-year-old female with bipolar disorder with psychotic features using telemedicine through the Jiyyo Mitra E-Clinic platform. Over two years and 11 virtual consultations, a multidisciplinary approach was implemented, including pharmacological treatment, psychoeducation, and regular follow-ups. Treatment was tailored to her needs, addressing psychiatric symptoms, comorbidities, and challenges during pregnancy, ensuring both maternal and fetal safety. The use of telemedicine significantly improved accessibility, reduced costs, and enhanced treatment adherence, demonstrating its transformative role in providing effective, personalized mental healthcare in underserved areas.

Keywords: Bipolar Disorder, Psychiatric Symptoms, Telemedicine.

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PARAPHENYLENE DIAMINE POISONING: A GROWING PUBLIC HEALTH CONCERN

N. RAJITHA, U. VEERENDRA

Department of Pharmacy Practice, Raghavendra Institute ofPharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur, India. Email: rajitharajnanneboina67@gmail.com

Abstract

Background: Paraphenylenediamine (PPD), a key component in many hair dyes, has emerged as a significant toxic agent in developing countries, where it is widely available and used in intentional self-harm. A lack of a known antidote and multi-organ toxicity make PPD poisoning extremely dangerous.

Objective: This review aims to examine the clinical profile, epidemiological trends, mechanisms, and management strategies associated with PPD poisoning, with a focus on its impact as a growing public health concern in low- and middle-income countries.

Methodology: A narrative review was conducted using electronic databases including PubMed, Google Scholar, and Scopus. Relevant literature on paraphenylenediamine (PPD) poisoning was selected based on keywords. Studies discussing clinical features, epidemiology, and management were included, focusing primarily on data from developing countries with high incidence of PPD toxicity.

Results: PPD poisoning predominantly affects the respiratory, renal, cardiovascular, hepatic, and nervous systems. Angioneurotic edema, rhabdomyolysis, acute kidney injury, and myocarditis are key life-threatening complications. The review identifies higher incidence rates among women and children, particularly in South Asia and Africa. The absence of regulations on PPD concentration and insufficient poison information systems contribute to the rise in cases.

Conclusion: PPD poisoning is an emerging toxicological crisis. Early recognition, aggressive supportive care, and regulatory interventions are critical. A multi-sectoral response involving healthcare providers, and public awareness efforts is essential to reduce incidence and improve outcomes in affected regions.

Keywords: Para phenylene diamine, Suicide, Public health, Hair dye poisoning, Epidemiological.

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IMPACT OF LEVONORGESTREL INTRAUTERINE SYSTEM ON QUALITY OF LIFE IN WOMEN WITH ABNORMAL UTERINE BLEEDING.

N. NAGA LAKSHMI*, M. MANOJ KUMAR, M. QUEENI SHAROON

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur, India. E-Mail: nagalakshmi0573@gmail.com

Abstract

Background:Abnormal Uterine Bleeding (AUB) is common among Perimenopause women, which defines bleeding from the uterus that is abnormal in volume (>80mL), frequency, regularity, and duration (> 7 days).Conservative and surgical approaches are treatment techniques used in AUB.Mirena® [Levonorgesterol Releasing Intra-Uterine System (LNG-IUS)] is a T-shaped intrauterine polyethylene device. LNG is released at a rate of 20mcg/day for the first five years. After which, it is limited to 11 mcg/day. The intense suppression of endometrium can reduce the duration and amount of blood loss.Majorly, LNG-IUS is a safe, less expensive, and successful treatment for AUB replacing a hysterectomy plan.

Objectives: To study the quality of life of abnormal uterine bleeding patients by using SF -36.

Methods:This was a Prospective, observational clinical study conducted on women with AUB who met eligibility criteria. LNG-IUS was inserted in phase following baseline. The patients were followed at base line and 3rd month

Results: Statistically significant improvement was observed in Quality of Life (QOL) scores from baseline to follow-up. The mean QOL score at baseline was 34.81% ± 5.55, which increased to 49.62% ± 8.13 at follow-up representing a 42.5% relative increase. Indicates that the statistically significant ($p = 0.011$). Furthermore, a moderate positive correlation was observed between baseline and follow-up QOL scores.

Conclusion: The use of the Levonorgestrel Intrauterine System (LNG-IUS) significantly improved the quality of life in women with Abnormal Uterine Bleeding. The substantial reduction in bleeding and related symptoms suggests that LNG-IUS is an effective, non-invasive alternative to hysterectomy.

Keywords: Abnormal Uterine Bleeding; LNG-IUS (Mirena®);Quality of Life.

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EFFECTIVENESS OF PROBIOTICS IN GASTROINTESTINAL DISORDERS - A NARRATIVE REVIEW

B. RAVI TEJA, B.SAHITHI REDDY

Department of Pharmacy Practice,Raghavendra Institute of Pharmaceutical Education and Research (RIPER) – Autonomous

Abstract

The overuse of antibiotics has led to adverse effects such as antibiotic-associated diarrhoea (AAD), gut dysbiosis, and compromised intestinal barrier function. Emerging evidence suggests that probiotics, when used along with antibiotics, can help mitigate these effects and support overall gut health. This narrative review compiles findings from systematic reviews and network meta-analyses highlighting the benefits of probiotics in various gastrointestinal conditions. Probiotics have proven effective in preventing AAD, particularly at higher dosages and with specific strains, though their utility may be limited in individuals with low baseline AAD risk. In the management of Irritable Bowel Syndrome (IBS), Bacillus coagulants has demonstrated promising efficacy. Incorporating this strain into multi-strain probiotic combinations or enhancing its function through genetic engineering could offer future therapeutic benefits for IBS patients. Additionally, probiotics are shown to improve intestinal barrier function, alleviate inflammation, and correct microbial imbalances. These properties make them valuable adjuncts in treating gut-related disorders. Despite positive outcomes, further high-quality randomized controlled trials are needed to draw definitive conclusions and develop clear clinical guidelines. Overall, probiotics present a safe and effective approach to enhancing the outcomes of antibiotic therapy while minimizing associated gastrointestinal complications.

Keywords: Probiotics, Antibiotics, Gut health.

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CHRONIC OCCUPATIONAL BYSSINOSIS WITH COR PULMONALE AND PAH IN A COTTON TEXTILE WORKER: A CASE REPORT

GOOTY SHANAZ*[1],HEMALATHA A[1], BHAVANA J M[1], MOHAMMED AZHAR HUSSAIN[1], RAGHAVENDRA PRASAD B N[2]

[1]College of Pharmaceutical Sciences, Dayananda Sagar University
[2]Dr. Chandramma Dayananda Sagar Institute of Education and Research (CDSIMER) [2]
E-Mail: gshanaz2000@gmail.com

Abstract

Background: Byssinosis is a chronic obstructive pulmonary disease resulting from sustained inhalation of cotton dust, predominantly affecting textile industry workers in low and middle-income countries. Chronic exposure may precipitate severe pulmonary complications, including Cor Pulmonale and Pulmonary Arterial Hypertension (PAH), with significant morbidity.

Case Presentation: We report the case of a 52-year-old Indian male textile worker with advanced byssinosis, presenting with progressive breathlessness, wheezing, and a two-year history of Cor-Pulmonale and Pulmonary Arterial Hypertension. Clinical findings included clubbing, bilateral pedal edema, and oxygen desaturation (75%). Treatment involved oxygen therapy, bronchodilators, corticosteroids, and supportive care, with significant symptomatic improvement.

Conclusion: The serious consequences of chronic byssinosis, a result of long-term occupational exposure to cotton dust, are demonstrated by this case report. Extended exposure to cotton dust in the textile industry may result in significant cardiopulmonary disorders. Preventing the progression of the disease requires strict industrial safety regulations, early diagnosis, and the use of personal protective equipment. A multidisciplinary strategy is essential for enhancing patient outcomes and lowering chronic morbidity.

Keywords: Byssinosis, Cor Pulmonale, Occupational Health, Pulmonary Arterial Hypertension, Respiratory Symptoms, Cotton Textile.

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BACTERIOLOGICAL PROFILES AND ANTIBIOTIC SUSCEPTIBILITY IN NEONATAL SEPSIS: DEVELOPMENT OF AN ANTIBIOGRAM IN A SECONDARY CARE HOSPITAL OF SOUTH INDIA.

M. HABEEBA KHATUN[1]*, C. CHIRADEEP[1], R. MANU[1], DR. C. SURESH[2], DR. DASARATHA RAMAIAH[3]

[1] V Year, PharmD, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical education and research (RIPER) Autonomous, Anantapur, Andhra Pradesh, India, [2] Assistant Professor, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER) Autonomous, Anantapur, Andhra Pradesh, India. [3] MD, Head Department of Paediatrics, RDT Hospital, Bathalapalli, Anantapur, Andhra Pradesh,India. **E-Mail**: habeeba.khanas@gmail.com

Abstract

Background: Neonatal sepsis is a dysregulated host response to systemic bacterial infection within the first 28 days of life and remains a leading cause of mortality in developing countries like India. To reduce associated mortality and morbidity, understanding the epidemiology of bacterial strains and their antibiograms in healthcare settings is essential for guiding effective empirical antibiotic therapy.Objectives: To study the prevalence of culture positive neonatal sepsis, to assess antibiotic susceptibility patterns and identify the bacterial strains, to develop an antibiogram.

Methods: A retrospective observational study was conducted in the Neonatal Intensive Care Unit (NICU) of Rural Development Trust (RDT) Hospital, Bathalapalli, Anantapuram, using data on bacterial isolates collected from June 2021 to June 2024. Samples included blood, urine, sputum,Umbilical Venous catheter (UVC), Umbilical arterial catheter (UAC),Peripherally inserted central catheter (PICC), Central line blood culture, cerebrospinal fluid (CSF), and eye swabs, obtained from neonates aged 0-28 days.

Results: Out of 429 positive culture, 160(37.3%) positive blood culture,139(32.4%) cultures showed positive urine culture,60(14%) cultures showed eye swab culture, 24(5.6%) umbilical venous catheter (UVC), 23(5.4%) endotracheal aspirate, 21(4.9%) cultures showed umbilical arterial catheter (UAC) and 2 (0.5%) cerebrospinal fluid culture. Most common bacterial isolates were gram negative, predominantly the klebsiella pneumonia (n=132, 30.8%). Klebsiella pneumonia showed good suspect ability to colistin (100%), amikacin (77.5%), Meropenem (71.8%), gentamicin (65.6%). Among cultures with gram positive species, staphylococcus aureus (n=16, 3.7%) predominated and followed by enterococcus faecalis (n=14,3.3%). Staphylococcus aureus showed good suspect ability (100%) to doxycycline linezolid and vancomycin.

Conclusion: The study reveals both gram-positive and gram-negative isolates showed high resistance to commonly used first line drugs. there is increased trend in antibiotic resistance in bacterial strains of neonatal sepsis highlights the need of antibiotics susceptibility testing of bacterial strains for proper antibiotics administration.

Keywords: Neonatal sepsis, Antibiotic resistance, Bacterial isolates, Antibiogram, Empirical therapy

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DRUG REPURPOSING IS AN EMERGING APPROACH: A REVIEW ON STRATEGIES AND CHALLENGES

YARAVA DHANUSH, SUDHA B SOPPIMATH, VAKKALAGADDA SIVA GANESH*, MOHAMMAD ALI*

Department of Pharmacology, Sri Adichunchanagiri College of Pharmacy, Adichunchanagiri University, BG Nagara, Karnataka, India. E-Mail: ganesh.cology@gmail.com

Abstract

Background: The pharmaceutical industry has faced declining Research and Development [RandD] productivity over the past several decades, raising concerns about future innovation capabilities. According to Eroom's Law, the efficiency of discovering new drugs has decreased despite rapid scientific and technological progress. On average, developing a new chemical compound into an approved drug costs between $2-3 billion, yet only 2% of drug candidates make it through the full development process to market launch.

Method: Drug repurposing approach offers a promising alternative to traditional drug development by emphasising existing medications and exploring their potential for new therapeutic applications. These medications may include those that (i) failed to exhibit efficacy in late-stage clinical trials despite confirming safety, (ii) have been discontinued for commercial reasons, (iii) lost patent protection, or (iv) are being explored for use in other markets.

Conclusion: This review outlines drug repurposing approaches and methodologies, assesses the field's problems, and provides fresh proposals to overcome these barriers and realise their full potential.

Keywords: Drug Repurposing, Traditional Drug development, Research and Development, Drug Development, strategies

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DEVELOPMENT OF POLYPHYTO IMMUNE CHARGER HERBAL TEA SACHETS

DR SIRISHA[2], S. DEEPTHI[3], N. VENUKA DEVI[1*],

[1]**Assistant professor Grade 1, Department of Pharmaceutics, Nitte College of Pharmaceutical Sciences *(Nitte deemed to be university)*, Bengaluru, Karnataka, India.**
[2]**Head of the Department, Department of Pharmacognosy, Nitte College of Pharmaceutical Sciences *(Nitte deemed to be university)*, Bengaluru, Karnataka, India.**
[3]**Student, Nitte College of Pharmaceutical Sciences *(Nitte deemed to be university)*, Bengaluru, Karnataka, India.**
Email: venuka.n@nitte.edu.in

Abstract

Background: In recent years, there has been a significant increase in consumer interest in natural health products and functional foods, particularly in the wake of global health challenges such as the COVID-19 pandemic. Herbal teas, traditionally consumed for their soothing and therapeutic properties, have gained renewed attention as convenient and natural approaches to enhance general well-being and support immune function.

Objective: This aim of the study is to formulate and develop an effective polyphyto (multi-herb) immune-boosting herbal tea in convenient sachet form, using scientifically selected medicinal plants known for their immunomodulatory, antioxidant, and health-promoting properties, aimed at enhancing general immunity, promoting wellness, and offering a natural alternative to synthetic supplements.

Methods: Herbal tea was prepared by accurately weighing the powdered ingredients according to the specified formula. Once the ingredients were measured, they were combined thoroughly to ensure an even distribution, achieving uniformity in texture and potency. Next, the blended herbal powder was carefully transferred into a tea bag, ensuring the bag was filled appropriately for efficient infusion. The tea bag was placed into a cup of hot water, typically between 180°F to 200°F (82°C to 93°C), and allowed to steep for 3-5 minutes, depending on the desired strength. After the steeping time, the tea bag was removed from the water, stirred gently if needed, and the flavorful herbal tea was enjoyed.

Results: The taste and infusion strength met expectations, with a balanced flavour and pleasant after taste. Sachets steeped consistently within the recommended time and temperature range. The moisture content, total ash value, and antioxidant activity were assessed to ensure the tea's effectiveness and quality.Packaging was safe, eco-friendly, and properly sealed to maintain freshness, while batch consistency, consumer feedback, and shelf life served as important indicators of overall product quality.

Conclusion: The formulation F2, a herbal tea blend, demonstrated promising immune-boosting properties, with antioxidant activity exhibiting an IC50 of 944.59 ± 7.17 µg/mL and immunomodulatory effects showing a CTC50 of 169.8 µg/mL against Human Leukemia monocytes (THP-1).

Keywords: Herbal tea, immunity, antioxidant activity, immunomodulatory activity, phytochemicals, cytotoxicity, and anti-obesity activity.

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EVALUATING THE EFFECT OF MEDICATION ADHERENCE ON DEPRESSION AND QUALITY OF LIFE IN TYPE 2 DIABETES MELLITUS

ABHIRUP BHUSAN NANDI[1], MOHAMMED AZHAR HUSSAIN[1], GOOTY SHANAZ[1], SANNIK CHAKRABORTY[1], MAHADEVAMMA LINGAIAH[*1], SHASHIKUMAR N[2], MUDIGUBBA MANOJ KUMAR[3]

[1]Department of Pharmacy Practice, College of Pharmaceutical Sciences, Dayananda Sagar University, Bangalore, Karnataka, India, [2]Department of General Medicine, CDSIMER, Dayananda Sagar University, Bangalore Karnataka, India, [3]Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research-Autonomous, Anantapur, Andhra Pradesh, India. E-Mail: abhirupnandi24@gmail.com

Abstract

Background: Diabetes Mellitus represents a major global health burden, significantly elevating the risk of comorbidities and complications. Medication adherence, a key modifiable factor, plays a crucial role in optimal disease management. Enhancing adherence not only improves glycemic control but also reduces the progression of depressive symptoms, which are often linked to diminished quality of life.

Objectives: This study aims to investigate the association between medication adherence and the severity of depressive symptoms, and to evaluate its impact on the quality of life (QOL) in patients with Type 2 Diabetes Mellitus.

Methodology: We conducted a cross-sectional study involving 101 patients diagnosed with Type 2 Diabetes Mellitus. Medication adherence was evaluated using the Medication Adherence Report Scale (MARS). The severity of depressive symptoms was assessed with the Hamilton Depression Scale (HDS), and QOL was measured using the World Health Organization Quality of Life (WHOQOL) questionnaires.

Results: The study population comprised 101 patients, with 64.4% identifying as female and 35.6% as male, predominantly aged between 50 and 70 years. Our findings indicate that the severity of depressive symptoms increases among patients with lower medication adherence. Furthermore, a significant association was observed between depressive symptoms and diminished quality of life. Regression analysis revealed that the MARS score significantly predicts variations in HDS scores, whereas the HDS score serves as a predictor for QOL outcomes.

Conclusion: Implementing strategies to enhance medication adherence may effectively delay the progression of depressive symptoms among Type 2 diabetes patients. Better management of depressive symptoms can lead to improved quality of life for this population.

Keywords: Diabetes Mellitus, Medication Adherence, Depression, Quality of Life.

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NEUROTOXIC ENVENOMATION LEADING TO COMPARTMENT SYNDROME: A CASE OF COBRA BITE

BHAVANA J M[1], HEMALATHA A[1], MOHAMMED AZHAR HUSSAIN[1], LITA SUSAN THOMAS[1]

Department of Pharmacy Practice, College of Pharmaceutical Sciences, Dayananda Sagar University[1], Dr Chandramma Dayananda Sagar Institute of Medical Education and Research (CDSIMER)[2] , India. E-Mail: bhavanamanju72@gmail.com

Abstract

Background: Snake bites are prevalent in rural areas and can be either poisonous or non-poisonous. One of the complications of snake bite is compartment syndrome which results in elevated intra-compartmental pressure leading to hypoxia and irreversible tissue damage. Fasciotomy is the procedure which is done to relieve compartment syndrome. This report presents a case of compartment syndrome following a cobra bite.

Case presentation: This report presents a case of compartment syndrome of the right upper limb in a 66-year-old female patient due to cobra bite at her residence. She was brought to hospital after a time lapse of 1 hour. Initially at the time of admission the patient did not show any signs of respiratory discomfort but later within 1 hour she developed respiratory distress with impending respiratory failure. Intubation was performed in the view of respiratory failure and was shifted to Intensive Care Unit (ICU) for further management. After the diagnosis of compartment syndrome, fasciotomy was performed with consent of the patient's representative. Post surgery, she was managed with IV fluids and antibiotics. A total dose of 35 vials of Anti Snake Venom (ASV) was administered. The patient got discharged on the 9th day of admission at request.

Conclusion: Compartment syndrome can mimic the signs and symptoms of snake bite so it is very important to diagnose and treat compartment syndrome. The administration of Anti snake venom (ASV) is crucial in all cases of snake bite rather than waiting for development of signs of envenomation.

Keywords: Compartment syndrome (CS), Fasciotomy, Cobra bite, Intensive care unit (ICU), Anti snake venom (ASV)

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PESTICIDE POISONING IN RURAL INDIA: AN EMERGING PUBLIC HEALTH CRISIS

HEMALATHA A[1], BHAVANA J M[1], SHASHI KUMAR N[2], LITA SUSAN THOMAS[1]

Department of Pharmacy Practice, College of Pharmaceutical Sciences, Dayananda Sagar University, Dr. Chandramma Dayananda Sagar Institute of Education and Research (CDSIMER), India. E-Mail: hemalathaa682@gmail.com

Abstract

Background: Pesticide poisoning continues to be a global significant health concern, particularly affecting developing nations like India, where agriculture serves as a key source of income. Rapid agricultural and industrial development has led to the extensive use of pesticides, which has raised exposure risks that for farming communities.

Objective: To assess the frequency, severity, and management of pesticide poisoning and provide patient counselling on pesticide safety.

Methodology: A prospective observational study was conducted over six months at a rural tertiary care hospital, CDSIMER. Participants were enrolled using convenience sampling based on predefined inclusion and exclusion criteria.

Result: Among 83 poisoning cases, the majority were males aged 30–50 years, with family disputes identified as the leading cause. The most frequently reported agents were insect repellents (47.0%), primarily cypermethrin, followed by insecticides (31.3%), mainly dichlorvos, herbicides (12.0%), and rodenticides (3.6%). Based on the Poison Severity Score, moderate severity was observed in 32.5% of cases, mild in 30.1%, asymptomatic in 21.7%, and severe in 15.7%. Gastric lavage was administered in all cases (100%), with atropine and pralidoxime (PAM) being the most commonly used antidotes.

Conclusion: Males in their middle years are the most afflicted demographic, highlighting the significant burden of pesticide poisoning in rural areas. The fact that cypermethrin and dichlorvos are used so often shows how important it is to have better control over common pesticides. Although timely measures like gastric lavage and antidotal medication were regularly used, preventative measures are still not being used to their full potential. Stricter control of pesticide availability, mental health services, and public education should be prioritized in order to reduce the likelihood of both purposeful and accidental poisonings.

Keywords: Dichlorvos, Cypermethrin, Poisoning Severity Score, Gastric lavage, Atropine, Pralidoxime

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3-YEAR RETROSPECTIVE STUDY OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) FROM RURAL SECONDARY CARE REFERRAL HOSPITAL IN SOUTH INDIA FROM 2021-2024

J. SRIVALLIKA*, U. VEERENDRA

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu post, Anantapur, India. E-Mail: srivallikaj694@gmail.com

Abstract:

Background: Staphylococcus aureus is a non-motile, Gram-positive coccus that colonizes in clusters. It is found worldwide and is a leading cause of disease. Methicillin-resistant Staphylococcus aureus (MRSA) is a serious nosocomial pathogen, and a related community-sourced MRSA is emerging.MRSA is a major healthcare concern due to its resistance to commonly used antibiotics

Objectives: To analyse the overall proportion of MRSA among Staphylococcus Aureus samples. To identify the types of clinical specimens which MRSA is most commonly isolated. To assess the antimicrobial sensitivity pattern of MRSA isolates.

Methodology: This is a retrospective study with a duration of 3 years. The Data was collected in the rural secondary care hospital at the clinical microbiology department.

Results and conclusion: MRSA isolates were collected across various age groups, with the highest no. of individuals 11-40 years of age. Male Medical Ward (56%) and Orthopaedics Ward (43%) showed the highest MRSA prevalence. High resistance was observed to cloxacillin, penicillin G, and ciprofloxacin. Vancomycin, Doxycycline, and Linezolid showed good sensitivity against MRSA.

Keywords: Staphylococcus aureus, MRSA, Proportion, Resistance, Sensitivity

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A REAL-WORLD DISPROPORTIONATE ANALYSIS OF THE FOOD AND DRUG ADVERSE EVENT REPORTING SYSTEM (FAERS) DATABASE

M.ANANDABABU*, M. MANOJ KUMAR, S. B. AROMAL

II Year, PharmD PB, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER) - Autonomous, Chiyyedu Post, Anantapur, India. E-Mail: anandbabu64687@gmail.com

Abstract

Introduction: Delamanid is a drug that is employed for the treatment of MDR-TB. It acts by inhibiting the mycolic acid in the bacteria.Real-world studies on the safety of delamanid in large populations are lacking. This study aimed to determine the adverse events associated with delamanid in real-world settings by analysing data from the US Food and Drug Administration (FDA) Adverse Event Reporting System (FAERS).

Objectives:Safety aspects of Delamanid: A real-world disproportionate analysis of the Food and Drug Adverse Event Reporting System (FAERS) database.

Methods: We retrospectively extracted the reports on adverse drug events (ADEs) from the FAERS database from the first quarter of 2004 to that of 2024. By using disproportionality analysis including reporting odds ratio (ROR), proportional reporting ratio (PRR), and relative reporting ratio (RRR). we evaluated whether there was a significant association between delamanid and ADE.

Results: A total of 11,853 reports of delamanid as the "primary suspected" drug and top 50 significant adverse events of delamanid were identified, including some common adverse events such as chronic obseructive disease (RRR 1.50, ROR 1.50, PRR 1.42), acute psychosis (RRR2.14, ROR 2.14, PRR 1.91), Abortion missed PRR (3.22), ROR (3.22), RRR (2.61), Abortion spontaneous ROR (1.79), PRR (1.79), RRR (1.59), Abortion induced PRR (1.91), ROR (2.14), RRR (2.14), Erectile dysfunction ROR (2.21), RRR (2.21), PRR (1.96). The proportion of hospitalization is 2.02%, in our data some are reported as others. In terms of the geography, Africa had the largest percentage of the reports (1.49%), followed by the India (0.82%), then Japan (0.78%) following closely behind.

Conclusion:Our study's findings offer important information for maximizing delamanid's use and minimizing any possible negative effects, which should make it easier to utilize the medication safely in clinical settings.

Keywords: Delamanid, FAERS database, Disproportionate analysis.

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FROM SENESCENCE TO REJUVENATION: THE POTENTIAL OF GEROPROTECTIVE DRUGS

J.JAYA LAKSHMI DEVI*, M. MANOJ KUMAR, S. B. AROMAL

II Year, PharmD PB, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER) - Autonomous, Chiyyedu Post, Anantapur, India. E-Mail: sunnysunny23745@gmail.com

Abstract

Background: Ageing is an inevitable biological process associated with the gradual decline of physiological function and the onset of chronic diseases such as diabetes, cardiovascular disorders, and neurodegeneration. With increasing life expectancy, the focus has shifted toward prolonging healthspan through geroprotective strategies.

Objectives: This study aims to explore the emerging class of geroprotective drugs, their mechanisms, and their role in delaying age-related deterioration. It also seeks to highlight the current research trends and potential clinical applications.

Methodology: A comprehensive literature review was conducted using databases and published research to analyze and summarize various classes of geroprotective agents, their mechanisms, and evidence from preclinical and clinical studies.

Results: Key geroprotective agents identified include metformin, rapamycin, and the combination of dasatinib with quercetin. Rapamycin extended lifespan in animal models by 25% and showed improved immune response in humans. Metformin demonstrated delayed onset of age-related diseases. Dasatinib and quercetin have shown promise in improving osteoarthritis and pulmonary function. The results also suggest that lifestyle interventions such as diet, exercise, and sleep contribute significantly to efficacy.Conclusion: Geroprotective drugs represent a transformative frontier in medicine with the potential to extend healthy lifespan and reduce the burden of age-related diseases. However, more extensive clinical research, ethical considerations, and regulatory frameworks are essential before widespread application.

Keywords: Geroprotection, Ageing, Metformin, Rapamycin, Lifespan Extension

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CHIMERIC ANTIGEN RECEPTOR (CAR) T-CELL THERAPY: A TRANSFORMATIONAL ADVANCE IN CANCER IMMUNOTHERAPY

TENETI RANJITH KUMAR REDDY*[1], KUMMARA DURGA BHAVANI[1], C. CHANDHANA[1]

[1]IV Year, PharmD, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research, Anantapur, Andhra Pradesh, India. E-Mail: ranjithsyrus@gmail.com

Abstract

Background: Chimeric Antigen Receptor T-cell (CAR-T) therapy represents a cutting-edge approach in oncology, particularly effective in hematological malignancies. By reprogramming patient T-cells to target specific cancer antigens, CAR-T therapy bypasses traditional immune evasion mechanisms.

Objective: To review the mechanism, generations, clinical efficacy, challenges, and future directions of CAR-T cell therapy, with a focus on its expanding role in hematologic and solid tumors.

Methodology: An in-depth literature review was conducted using PubMed, Scopus, and recent clinical trials, focusing on FDA-approved CAR-T therapies, adverse events, resistance mechanisms, and emerging technologies.

Results: CAR-T therapies such as Tisagenlecleucel and Axicabtageneciloleucel have demonstrated remarkable remission rates in B-cell leukemias and lymphomas. However, limitations including cytokine release syndrome, neurotoxicity, and limited efficacy in solid tumors persist. Advances in dual-targeting CARs, armored CARs, and allogeneic products are under development to address these hurdles.

Conclusion: CAR-T therapy has significantly altered cancer treatment paradigms, especially in relapsed/refractory hematologic cancers. Continued innovation is critical to enhance safety, broaden its applicability, and make it accessible in low- and middle-income settings.

Keywords: CAR-T cells, immunotherapy, hematologic malignancies, cytokine release syndrome, solid tumors, gene therapy.

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INVESTIGATING LEVONORGESTREL INTRAUTERINE SYSTEM (LNG-IUS) FOR ABNORMAL UTERINE BLEEDING MANAGEMENT: EVALUATING TREATMENT OUTCOMES AND PATIENT RESPONSES

K. JAHNAVI[1], M. MANOJ KUMAR, M. QUEENI SHAROON

V Year, PharmD, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur, India.E-Mail: jaanu.konda1412@gmail.com

Abstract:

Background:Abnormal Uterine Bleeding (AUB) refers to uterine bleeding that is excessive in volume (>80mL), frequency, regularity, or duration (> 7 days), affecting about 17% of Indian women. Treatment options for AUB include conservative and surgical approaches. The Mirena® [Levonorgestrel Releasing Intra-Uterine System (LNG-IUS)] is a non-surgical treatment for severe menstrual bleeding that provides long-term relief. This significant endometrial suppression can reduce the duration and amount of bleeding, which may help reduce the financial burden for women dealing with AUB.

Objectives: To evaluate the effectiveness of LNG-IUS treatment progression as measured by the Pictorial Blood Assessment Chart (PBAC) score.

Methods:This study was a prospective, observational clinical investigation conducted on women diagnosed with abnormal uterine bleeding (AUB) who met the established eligibility criteria. The levonorgestrel-releasing intrauterine system (LNG-IUS) was administered in a subsequent phase following the baseline assessment. The patients were monitored for a duration of up to three months, during which the Pictorial Blood Assessment Chart (PBAC) score and subjective symptoms were evaluated.

Results:One patient (2.5%) opted to hysterectomy, other had spontaneous expulsion which experienced with side effect, often remain of 90% women continued to study and two patients (5%) were lost to follow-ups. Then by noticed mean PBAC score which measured blood loss, decreased considerably by a p-value of 0.002, as with symptoms reduction. Therefore, by which it significance refers as efficient management of LNG-IUS in AUB

Conclusion: Levonorgestrel-releasing intrauterine system (LNG-IUS) management in abnormal uterine bleeding (AUB) is resulted as effective with evaluated outcomes and responses

Keywords: Abnormal Uterine Bleeding; LNG-IUS (Mirena®); PBAC score.

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FATAL OUTCOME OF BULLOUS PEMPHIGOID TRIGGERED BY GLIPTINS-TENELIGLIPTIN: A CASE REPORT EMPHASIZING ADR AWARENESS

RAVINANDAN A P[1], MOHAMMAD SHEIKH ZAHIED*[2]

[1]Assistant Professor, Sree Siddaganga College of Pharmacy, Tumkur, Karnataka, India, [2]IV Year, Pharm D, Sree Siddaganga College of Pharmacy, Tumkur, Karnataka, India.E-Mail: shakezahid17year@gmail.com

Abstract

Clinical presentation:Through the concept of home medication review, a patient was found to have developed an adverse drug reaction (ADR). A 60-year-old female reported to the hospital with complaints of itchy lesions all over the body for 5 months, which increased within 5-6 days, which would bleed on scratch but no pus discharge, and complained of generalized weakness. The patient was healthy 5 months ago, and she has a known type 2 diabetes mellitus (T2DM) for which she has been taking a drug for 1 year. She was prescribed the Tablet Metformin 500 mg, and 7 months back, Teneligliptin was added due to lack of glucose control. Personal and family history were non-contributory.

An integumentary system examination reports the onset of a reddish brown 1° lesion—papules (fluid-filled blisters) scattered all over the body. Itching, excoriation, and weeping are present. The lesions were elevated with an indistinct border that bleeds on scratching.

Differential diagnosis:Anti-nuclear antibody by IFA, serum—negative, direct immunofluorescence test—The DIF section studied shows a linear deposit of IgG (3+) and C3(3+) along the dermo-epidermal junction. IgM, IgA, and C1q are negative.

Management: The physician diagnosed the patient with Bullous Pemphigoid and continued the same medications, including the tablet Voglibose (0.2mg), Metformin (500mg), and Glimepiride (2mg), Prednisolone 20mg, Clobestol and Fusidic acid cream, Tetracycline 500mg, and Tab Cetirizine 10mg, the clinical pharmacist collected the information from the home service in the patient's residence. At the second visit, the patient was unfortunately reported as dead due to uncontrolled bullous pemphigoid.

Outcome / Conclusion: This case is the best example of a new prescribing cascade concept. In this condition, stopping Teneligliptin is the best treatment option to overcome ADR. Also, the administration of Teneligliptin should be avoided for elderly patients to reduce blood pressure problems.

Keywords: Bullous Pemphigoid, Teneligliptin, Adverse drug reaction, Prescribing cascade.

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THE WHO-AWARE BASED ANTIBIOTIC UTILIZATION PATTERN IN GENERAL MEDICINE DEPARTMENT: AN OBSERVATIONAL STUDY

SUSHMITHA S[1], PRAVALLIKA SRIVASTAVA[1], SHADAB[1], SRISHTI S SHETTY[1], MANOJ MUDDIGUBBA[2], NAYANA R[3], MAHADEVAMMA L[1]*

[1]Department of pharmacy practice, college of pharmaceutical sciences, Dayananda Sagar University, Bangalore, Karnataka, India, [2]Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research-Autonomous, Anantapur, Andhra Pradesh, India, [3]Department of General Medicine, CDSIMER, Dayananda Sagar University, Bangalore, Karnataka, India.E-Mail: sushmithapharmd23@gmail.com

Abstract

Background: The Access, Watch, and Reserve (AWaRe) antibiotic classification was developed by the WHO to enhance clinical outcomes and accessibility, minimize the likelihood of antimicrobial resistance, and conserving the efficacy of antibiotics used as a last resort. Purpose: To study the antibiotic utilization pattern in the general medicine department with the help of WHO AWaRe classification. **Methods**: The General Medicine Department inpatients at CDSIMER participated in six-month prospective observational research. In-patients prescribed with antibiotics were enrolled in the study while the patients discharged within 24 hours of hospital admission were excluded.

Results: Of the 217 individuals in the study sample, 65% were men. 36.8% of the patients were between the ages of 61 and 80. It was observed that the Watch class of antibiotics (85%) were prescribed at a higher rate compared to the Access class (14.11%). In total, 875.31 DOTS/1000 PD of watch class antibiotics were consumed, with cephalosporins being the most commonly used class (619.07 DOTS/1000 PD). Ceftriaxone was the most highly consumed antibiotic accounting for 566.35 DOTS/1000 PD. There were no drug-drug interactions associated with ceftriaxone. The incidence of ADR was negligible, occurring in 0.9% of patients.

Conclusion: The results show a significant prescription rate and consumption of antibiotics in the Watch class, especially cephalosporins, which is much below the WHO-recommended threshold (less than 40%).

Keywords: Antimicrobial Resistance, Antimicrobial stewardship, AWaRe, WHO, General medicine department, Ceftriaxone.

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MOMETASONE FUROATE AS A PREFERRED CORTICOSTEROID: A COMPREHENSIVE REVIEW OF CLINICAL UTILITY AND SAFETY

KUMMARA DURGA BHAVANI[1], TENETI RANJITH KUMAR REDDY[1], C. CHANDHANA[1], GUIDE: DR. C. SURESH[1]

[1]**Raghavendra Institute of Pharmaceutical Education and Research, Anantapur, Andhra Pradesh, India.**
E-Mail: ddurga30135@gmail.com

Abstract

Background: Mometasone furoate is a synthetic corticosteroid recognized for its high efficacy and favorable safety profile. It is widely used in dermatologic and respiratory conditions due to its strong anti-inflammatory properties and minimal systemic absorption.

Objective: To assess the safety and efficacy of mometasone furoate compared to other corticosteroids across various clinical indications.

Methodology: A comprehensive literature review was conducted using peer-reviewed clinical trials, pharmacokinetic analyses, and post-marketing surveillance reports on mometasone furoate and its alternatives.

Results: Mometasone furoate exhibits potent anti-inflammatory effects with minimal side effects such as HPA axis suppression or local atrophy. Clinical studies support its superior tolerability, especially in chronic conditions like asthma, allergic rhinitis, and eczema.

Conclusion: Given its robust efficacy and reduced systemic risk, mometasone furoate is a preferred corticosteroid in both topical and inhaled forms. Its use in pediatric and geriatric populations further affirms its safety.

Keywords: Mometasone furoate, corticosteroids, anti-inflammatory, safety, asthma,dermatology, allergic rhinitis.

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INHALED CORTICOSTEROIDS WITHDRAWAL IN COPD:IMPACT ON PNEUMONIA RISK AND CLINICAL OUTCOMES - A REVIEW

RAVINANDAN A P [1], BHANUJA SHAKTHI M C*[2]

[1]Assistant Professor, Sree Siddaganga College of Pharmacy, Tumkur, Karnataka, India, [2]Intern, PharmD, Sree Siddaganga College of Pharmacy, Tumkur, Karnataka, India. E-Mail: shakthimcb@gmail.com

Abstract

Background: Chronic obstructive pulmonary disease (COPD) management often includes inhaled corticosteroids (ICS), which reduce exacerbation rates but may increase pneumonia risk. Identifying outcomes of ICS deprescription is critical for optimizing treatment strategies.Objective: To evaluate the impact of ICS withdrawal versus continuation on COPD patients' exacerbation rates, lung function (LF), and pneumonia risk.

Methodology: A systematic review of randomized controlled trials and observational studies was conducted to provide a comprehensive and unbiased evaluation of the impact of ICS withdrawal versus continuation on COPD patients' exacerbation rates, LF, and pneumonia risk. Studies analysing COPD patients undergoing ICS withdrawal or continuation were included. Key outcomes measured included exacerbation rates (risk ratio, confidence interval, p-values), lung function changes (mean difference, confidence interval, p-values), and pneumonia rates. Data were stratified based on eosinophil levels and COPD severity to highlight subgroup effects.

Results: The findings suggest that abrupt ICS withdrawal increases exacerbation rates, worsens LF (Mean Diff -50 mL; CI: -70 to -30; $p < 0.001$), and significantly reduces pneumonia risk (RR: 0.96; CI: 0.88-1.05). Subgroups with eosinophil counts ≥300 cells/µL experienced higher exacerbation risks post-ICS withdrawal. Conversely, gradual withdrawal stabilized LF decline. Continued ICS use, particularly in combination with long-acting, showed sustained lung function LF but heightened pneumonia rates (RR: 1.38; CI: 1.15–1.65; $p < 0.001$).

Conclusion: This study's findings suggest that ICS withdrawal is feasible for COPD patients without frequent exacerbations or severe airway obstruction, especially those with low eosinophil levels. However, it is crucial to remember that individualized strategies are necessary to balance the risks of exacerbations and pneumonia. This balance ensures that the risks and benefits of each treatment are carefully considered, optimizing long-term outcomes and reassuring both patients and healthcare providers.

Keywords: COPD, ICS, deprescription, pneumonia risk, lung function, exacerbation management, personalized medicine.

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SCIENCE MEETS TECHNOLOGY – THE PIVOTAL ROLE OF INNOVATIONS IN MEDICAL ADVANCEMENTS

HAJI AFSHIN*, RAJAVARDHANA

Department of Pharmacy Practice, Balaji College of Pharmacy, Anantapur, India. E-Mail: hajiafshin268@gmail.com

Abstract

Science meets technology: breakthrough in medical research and development. In today's rapidly evolving healthcare landscape, technology has become integral to modern medical science. This abstract examines the pivotal role of technological innovation across diverse medical disciplines and highlights its transformative impact on research, diagnosis, treatment, and patient care. The fusion of science and technology has led to groundbreaking advancements in areas such as medical imaging, biomedical engineering, artificial intelligence, and precision medicine.

Recent developments in robotic surgery, telemedicine, and wearable health monitoring systems are revolutionizing how diseases are diagnosed, managed, and treated. These technologies have significantly improved patient outcomes by enabling earlier detection, personalized treatment plans, and real-time health tracking. This poster presentation explores how fast science is evolving through technological innovation and how these advancements are not only enhancing clinical efficiency but also reshaping the patient experience.

Moreover, the integration of AI-driven diagnostic tools, minimally invasive robotic procedures, and remote care platforms demonstrate how technology is bridging gaps in accessibility and medical expertise. These innovations have the potential to transform healthcare delivery, enhance patient care, and improve overall quality of life.

In this synergistic relationship between science and technology, the future holds immense potential to reshape our lives—driven by continuous scientific discoveries and innovative technological applications. As medical science and technological progress advance hand in hand, they pave the way for a more efficient, personalized, and equitable healthcare system.

Keywords: Medical Science,Technology Innovation,Healthcare Delivery, Artificial Intelligence,Biomedical Engineering,Medical Imaging,Robotic Surgery,Telemedicine,Wearable Health Technology,Disease Diagnosis,Precision Medicine,Patient Outcomes,Scientific Discoveries,Modern Healthcare, Healthcare Technology.

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EFFICACY OF T-DM1 IN HER2-POSITIVE METASTATIC BREAST CANCER: A REAL-WORLD RETROSPECTIVE STUDY

BHARGAV RAJ MS

Clinical Pharmacologist, Sri Shankara Cancer Hospital and Research Centre, Bangalore, India. E-Mail: drbhargavraj@gmail.com

Abstract

Background: HER2 is overexpressed in 15–20% of breast cancers. HER2-targeted therapies like Trastuzumab have improved survival outcomes; however, monotherapy is effective in only 25% of patients, necessitating combination with chemotherapy for enhanced efficacy—though with added toxicity. In advanced or metastatic settings, resistance to Trastuzumab often develops, requiring second-line treatments. Ado-trastuzumab emtansine (T-DM1), an antibody-drug conjugate combining Trastuzumab with the cytotoxic agent DM1, was approved by the FDA based on the EMILIA trial.Objectives: To evaluate the real-world effectiveness and safety of T-DM1 in patients with HER2-positive metastatic breast cancer and to identify factors affecting progression-free survival (PFS).Methods: A retrospective analysis was conducted on 42 patients with HER2-positive metastatic breast cancer who received T-DM1 between April 2021 and May 2023. The median follow-up duration was 9.3 months. PFS was analyzed in relation to hormone receptor status, HER2 IHC/FISH status, and presence of brain metastases. Toxicity data were also collected.Results: The median PFS was 10.9 months (95% CI: 8.7 to 13). Hormone receptor status had no significant impact on PFS ($p = 0.923$). There was no significant difference in PFS between HER2 2+ and FISH-positive patients (10.9 months) and HER2 3+ patients (9.4 months) ($p = 0.712$). However, patients without brain metastases had significantly longer PFS (11.2 months) compared to those with brain metastases (5.5 months, $p = 0.003$). T-DM1 was generally well tolerated, with only a few patients experiencing grade 3/4 toxicities.Conclusion: T-DM1 demonstrates real-world efficacy and tolerability in HER2-positive metastatic breast cancer. Patients with brain metastases exhibit significantly poorer outcomes, indicating a need for improved therapeutic strategies in this subgroup.

Keywords: HER2-positive breast cancer, T-DM1, brain metastases, progression-free survival, real-world evidence

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SYSTEMIC IDENTIFICATION OF ADRs IN ELDERLY INPATIENS USING THE PADROI TOOL: A SOLUTION FOR DEVELOPING NATIONS

M. SAI ROSHINI*, M. RENUKA DEVI, T. CHETHANA REDDY

IV Year, Pharm D, Raghavendra Institute of Pharmaceutical Education and Research, Autonomous, Anantapur, India.
E-Mail: chethanathunga@gmail.com

Abstract

Background: Hospitalized elderly persons are at an increased risk for ADRs due to age-related physiological changes in drug metabolism by their bodies, the combination of multiple medications, and the presence of multiple comorbidities. This problem is even more difficult to tackle in the low- and middle-income nations (LMICs) such as India due to the insufficiency of healthcare infrastructure and resources. PADROI is a tool established to bridge the gap. It uses readily accessible, routinely collected clinical data to forecast elderly patients who are at a high risk for ADRs.

Objectives: The initial aim of the research was to establish the efficacy of the PADROI tool at predicting ADRs among older inpatients. It also sought to establish whether the tool was practical and within cost in routine, resource-scarce settings, with special focus on its being practical within LMIC settings.Methodology: PADROI was constructed from a study that had found eight major risk factors for ADRs. Each of these factors was given a score based on its statistical significance. PADROI was subsequently tested in a prospective study at a Ugandan hospital, where patients aged over 60 were monitored for ADRs. PADROI's performance was subsequently compared using conventional measures of accuracy.

Results: PADROI performed well with an AUROC of 0.917, sensitivity of 87.1%, and specificity of 90.3%. PADROI performed well in identifying high-risk patients with low data requirements.

Conclusion: The PADROI tool is a simple, effective, and affordable way to improve patient safety for older adults. It holds real promise for enhancing drug safety practices in under-resourced health systems.

Keywords: Adverse Drug Reactions (ADRs), Elderly Inpatients, PADROI Tool

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A COMPREHENSIVE REVIEW OF INTRAVENOUS DRUG INCOMPATIBILITIES AND PATIENT SAFETY IN THE ICU

G. VYSHNAVI*, K.SAI SOWMYA, P. RAMSHA RAFIQ, B. SAHITHI

V Year, PharmD, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur, India. E-Mail: vyshureddy68@gmail.com

Abstract

Background: Intravenous (IV) drug incompatibilities in the Intensive Care Unit (ICU) represent a significant risk to patient safety due to the critical nature of the therapy and the frequent use of multiple medications. Drug incompatibilities can lead to increased risk for undesirable effects that can be lift threating.Objective: This review Provide a comprehensive overview of IV drug incompatibilities in the ICU, emphasizing their types, effects, preventive strategies, and the role of pharmacists in minimizing these risks to improve patient outcomes.

Methodology: A Narrative review was conducted. We searched PubMed, Scopus, Web of Science, Google scholar. Full text articles, abstract, letters written in English from inception up to Jan25,2023 to identify observational studies regarding IV drug incompatibilities, Preventive strategies and role of pharmacist.

Results: All in all, 329 articles were screened, 18 meeting all the acceptance criteria. The drug incompatibilities outlined and understand about use of multiple lumen devices, the purging of infusion lines and noisomes. The role of the pharmacist is crucial in reviewing prescriptions, identifying potential incompatibilities, and providing necessary guidance to healthcare providers.

Conclusion: Compatibility studies and the use of drug incompatibility charts help optimize patient care and prevent complications. A coordinated approach among healthcare professionals is key to minimizing the risks of IV drug incompatibilities and ensuring safe, effective treatment.

Keywords: Intravenous Drug incompatibilities, Preventive strategies, Intensive care Unit (ICU), Noisomes, Pharmacists' role, Patient outcomes.

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NEXT GENERATION PHARMACIST

K. SAI SOWMYA*, B. SAHITHI

V Year, PharmD, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur, India.E-Mail: saisowmya0987@gmail.com

Abstract

The role of pharmacists is undergoing a transformative shift, driven by advancements in healthcare, technology, and patient-centered care. The next generation pharmacist will transcend traditional dispensing roles, becoming integral members of multidisciplinary healthcare teams. They will focus on personalized medicine, utilizing pharmacogenomics and data analytics to optimize drug therapy for individual patients. Emerging technologies, such as artificial intelligence, telepharmacy, and electronic health records (EHR), will empower pharmacists to improve medication management, enhance clinical decision-making, and ensure medication safety. Future pharmacists will also play a pivotal role in public health, addressing issues like antimicrobial resistance, Intravenous incompatibilities, chronic disease management, and vaccine distribution. Their expertise in pharmacology will be crucial in guiding policy-making, promoting rational drug use, and leading health promotion initiatives. Furthermore, continuous professional development will be essential, as pharmacists adapt to rapidly evolving scientific knowledge and healthcare practices.

K**eywords:** Pharmacist, Public health, Electronic health records, Data analytics

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DIAGNOSING HLH IN A CHILD WITH DENGUE: A CASE STUDY ON STEROID TREATMENT AND SUPPORTIVE CARE

N. VENKATA MADHURI*, K.SRAVANI, B.DIVYA SREE, C.SURESH,

V Year, PharmD, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur, India. E-Mail: madhurinandyala69@gmail.com

Abstract

Background:Dengue fever, a common arboviral illness, can cause uncommon but severe complications, such as hemophagocytic lymphohistiocytosis (HLH). HLH is marked by inappropriate immune system activation, leading to cytopenias, hyperferritinemia, and failure of multiple organs.

Case details:A case of a 5-year-old patient presented with dengue fever that advanced to HLH, showing symptoms like persistent fever, hepatosplenomegaly, major thrombocytopenia, hyperferritinemia, and hypertriglyceridemia. The treatment approach included dexamethasone, amoxicillin, ambroxol, and supportive care.Conclusion:Timely diagnosis and management of dengue-associated HLH are essential for better outcomes. This case emphasizes the significance of early detection and the start of corticosteroid therapy in mitigating disease severity and enhancing patient recovery.

Keywords: Dengue fever, Hemophagocytic lymphohistiocytosis, Hyperferritinemia, Thrombocytopenia, Corticosteroid treatment, Infectious-induced HLH.

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INCIDENCE OF INTRAVENOUS DRUG INCOMPATIBILITIES AT TERTIARY CARE HOSPITAL

P.RAMSHA RAFIQ*, K.SAI SOWMYA, G.VAISHNAVI, B. SAHITHI

V Year, PharmD, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur, India. E-Mail: ramsharafiq34@gmail.com

Abstract:

Background: In ICU settings, patients often require multiple medications delivered through IV lines, increasing the risk of drug incompatibilities, where multiple medications are frequently administered simultaneously. These incompatibilities can lead to adverse reactions, reduced drug efficacy, and increased toxicity, compromising patient safety and treatment outcomes.Objectives:The study aimed to screen and classify IV drug incompatibilities, calculate their incidence, and create a checklist to prevent drug incompatibilities in ICUs.

Methodology: This prospective observational study was conducted at a multi-specialty hospital. Data was collected from 126 patients receiving IV therapy, we reviewed prescriptions, cross-checked incompatibilities using the "Micromedex" database and reference textbooks, and analyzed the data using SPSS software.

Results: Our findings showed that 26.15% of patients experienced IV drug incompatibilities, with 76.9% of treatments being compatible. The study population was mostly older adults (63%), and most patients (91.5%) used CVP lines for their IV therapy. And a checklist is prepared for the known incompatible drugs.Conclusion:Screening for IV incompatibilities is essential to reduce the risk of complications such as catheter occlusion and infections. A checklist for IV drug compatibility can improve patient safety and optimize treatment in ICU settings.

Keywords: Intravenous incompatibility, Intensive care unit, Drug interactions, Patient safety, Checklist.

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BIOSENSORS IN MEDICAL DIAGNOSTICS

ANUSHA TEKURUAND, K. ANITHA*

***Department Of Chemistry, Sri KrishnadevarayaUniversity,Ananthapuramu, Andhra Pradesh, India.**
E-Mail: tekuruanusha20@gmail.com

Abstract

A biosensor is universally defined as "a self-contained analytical device that combines a biological component with a physicochemical device for the detection of analyte of biological importance".Biosensors the crop of analytical devices are increasingly pivotal in biomedical research and clinical diagnostics, offering high specificity, sensitivity and rapid response time for detecting a wide range of biological analytes. These analytical devices integrate biorecognition elements-such as enzymes, antibodies or nucleic acids- with a physicochemical transducer result into early disease detection, real time therapeutic monitoring,and integration into wearable and implantable health systems. Recent advancements in Nanotechnology, microfiuidics (*AMicrofluidicPaper-BasedDeviceforMonitoringUreaseinSaliva*) and data analysts have significantly enhanced the performance and scalability of experimentationbiosensors driving their evolution towards personalized and precision medicine.

Recent developments on flexible, implantable and AI-integrated biosensors are also reported in this article. Biosensors in medical diagnostic serve to detect the disease as quickly as practicable to provide health attention to a great extent for instance glucose, creatine, urea, etc. The field-effect transistor (FET)-based biosensing device for detecting SARS-CoV-2 in clinical samples has been reported. In research of cancer, biomarkers electrochemical biosensors are used for faster and more accurate diagnosis. HER2 over expression, HER2/neu amplification, MSI-H and PD-L1+ are used as predictive biomarkers in gastric cancers. They enable the early detection of diseases and allowing for timely intervention and improved treatment outcomes. Many other sensors used in other fields of applications, biosensors are designed with unique features such as biocompatibility, biodegradability due to environment which they function.Biosensors are transforming biomedical science, offering innovative tools for diagnostics, therapy, and health monitoring. As technology progresses, biosensors will continue to play a critical role in personalized, precise and preventive healthcare. With each breakthrough, biosensors bring us closer to a future where healthcare is not just a reactive response, but a proactive and personalizedendeavors, enriching lives and enabling the triumph of the human spirit over adversity.

Keywords: Biosensors, microfiuidics, diagnostics, personalized.

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KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS USAGE OF SMART PHONE AND ITS EFFECTS ON SLEEP PATTERNS AMONG STUDENTS

S. SREENIVAS*, D.RAMESH REDDY, P.RAMSHA RAFIQ, K.HARSHA PRIYA, T. RAJAVARDHAN

V Year, PharmD, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur, India. E-Mail: sreenivassankarapu14@gmail.com

Abstract:

Background: Smartphones, with their multifunctional capabilities and internet access, have become integral to daily life. Their popularity has grown rapidly, especially among students who have grown up using them. The COVID-19 pandemic further boosted their use in education, emphasizing their importance in modern communication, learning, and everyday activities.

Study objectives: To assess the relationship between excessive mobile phone usage—including social media engagement—and sleep quality, while also evaluating the knowledge, attitudes, and practices (KAP) of pharmacy students in Ananthapur regarding the impact of mobile phone overuse on sleep patterns.

Methodology: The study was a observational cross sectional study of Pharmacy students from two pharmacy institutions in and around Ananthapur. The research was between December to February.

Results: Out of 291 pharmacy students, the majority (71.4%) were aged between 18–20 years, with a mean age of 19.87 ± 1.40 years. Most participants were female (62.8%). Of the respondents, 53.2% were pursuing a Bachelor of Pharmacy and 46.7% a Doctor of Pharmacy. The highest representation was from 2nd-year (29.6%) and 1st-year (28.5%) students. Additionally, 40.5% of the students resided in institutional hostels. Conclusion: This study concludes that excessive mobile phone usage, especially among pharmacy students, significantly impacts sleep quality, leading to disturbances such as eye strain, mood changes, and depression. Promoting healthier digital habits is essential to mitigate the negative effects on mental well-being and academic performance.

Keywords: Smart phone, addiction, knowledge, students, sleep pattern.

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INNOVATIVETHERAPEUTICSTRATEGIESFORMRSA:ADVANCINGBEYOND CONVENTIONAL ANTIBIOTICS

BESTHATHARUNKUMAR*, U VEERENDRA

II Year, PharmD PB, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Anantapur, India. E-Mail: besthatharunkumar2000@gmail.com

Abstract

Methicillin-resistant *Staphylococcus aureus* (MRSA) is a major pathogen causing severe infections like pneumonia, endocarditis, and sepsis, with resistance to β-lactam antibiotics necessitating novel therapeutic strategies. While traditional antibiotics such as vancomycin and linezolid remain effective, concerns over resistance and toxicity demand alternative approaches. This review explores innovative MRSA treatments, including next-generation antibiotics, combination therapies, bacteriophage therapy, antimicrobial peptides, and immune-based interventions. New agents like ceftaroline and delafloxacin show promise, while combination strategiesenhancebacterialeradication.Bacteriophagetherapyoffersahighlyspecificalternative, and antimicrobial peptides exhibit potent antibacterial activity with minimal resistance. Immunotherapy,including monoclonal antibodiesandvaccines, isemerging asa viableoption to strengthen host defenses. Additionally, nanotechnology facilitates targeted drug delivery, enhancing antibiotic efficacy while reducing side effects. CRISPR-Cas technology represents a cutting-edge approach to combat bacterial resistance at the genetic level. A multidisciplinary approach incorporating novel antimicrobials, biological therapies, and advanced technologies is crucial to overcoming MRSA infections. Future research should focus on optimizing these strategies to improve clinical outcomes and minimize resistance development

Keywords: MRSA, novel therapies, bacteriophage, antimicrobial peptides, CRISPR-Cas, immunotherapy, nanotechnology.

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STAPHYLOCOCCUS AUREUS(MRSA) FROM RURAL SECONDARY CAREREFERRAL HOSPITAL IN SOUTH INDIA FROM 2021-2024

M.SUCHITHA*,U.VEERENDRA

II Year, PharmD PB, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Anantapur. E-Mail: suchithamesa10@gmail.com

Abstract

Background: Methicillin-resistant staphylococcus aureus is a strain of thebacterium staphylococcus aureus that has developed resistance to beta-lactumantibiotics,and other penicillin derivatives.As a result,MRSA infections are challenging to treat,as they are resistant tomany commonly used antibiotics.

Objectives:To identify the types of clinical specimens where MRSA is mostcommonly isolated.

Methodology:Three years retrospective study on methicillin resistantstaphylococcus aureus(MRSA)from rural secondary care referral hospital inSouth India from 2021-2024.

Results and Conclusion:we collected the sample size(207)from that theclinical specimens of MRSA (2021-2024)from that the pus culture andtissue culture are having the high ranges.

Keywords: Staphylococcus aureus, methicillin resistance, beta-lactumantibiotics

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IMPACT OF PHARMACIST COUNSELLING ON MEDICATION ADHERENCE AND ITS CORRELATION WITH DRUG-RELATED PROBLEMS IN PAEDIATRIC EPILEPSY MANAGEMENT

D.RAMESH REDDY*, G.MOHAN KRISHNA,S.HAMEED BASHA, DASARATHA RAMAIAH, B.SAHITHI

V Year, PharmD, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Rural Development Trus (RDT) Hospital, Bathalapalli, Anantapur, India. E-Mail: rameshreddybujji25@gmail.com

Abstract

Background: Epilepsy is a chronic neurological disorder with recurrent seizures due to abnormal neuronal activity. Treatment involves long-term anti-epileptic drugs, effective in about 70% of patients. In drug-resistant cases, surgery or dietary therapies may be considered. Medication adherence is crucial, especially in children, to ensure better seizure control and outcomes.Objectives**:**The study aimed to assess medication adherence, identify reasons for non-adherence, and evaluate the impact of patient counseling on improving adherence rates.

Methodology:A prospective observational study was conduced at Secondary care hospital, Bathalapalli with approved protocols and consent. Participants were divided into counselling and standard care groups based on counsellor availability. Medication adherence and drug-related problems were assessed after one month using the MARS scale. Statistical analysis was used to evaluate the impact of patient counselling on medication adherence.

Results:A total of 128 paediatric epilepsy patients participated in the study. The counseling group had a mean age of 6.30 ± 3.7 years, indicating a greater number of infants and young children, while the standard group had a mean age of 16.57 ± 3.4 years, with more older children. Both groups had nearly equal gender distribution, showing no significant gender bias. Forgetfulness was the most common reason for non-adherence (26%), followed by refusing prescribed drugs, lack of follow-up, poor counseling, side effects, cost, and changes in drug or dosage. The counseling group showed significantly better adherence outcomes, with 47% fully adherent and only 28% non-adherent, compared to 26% and 45% respectively in the standard group, supported by a chi-square value of 21.36 and p = 0.045, emphasizing the positive impact of pharmacist counseling.

Conclusion: This observational study showed that patient counselling significantly improved medication adherence and reduced drug-related problems in pediatric epilepsy.The findings emphasize the value of structured counselling and education in enhancing treatment outcomes.

Keywords: Pediatric Epilepsy, Medication Adherence, Pharmacist Counseling, Drug-Related Problems, Anti-Epileptic Drugs.

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THE GLOBAL BURDEN OF NEONATAL SEPSIS: EPIDEMIOLOGY, RISK FACTORS AND MANAGEMENT

C. CHIRADEEP[1]*, M. HABEEBA KHATUN[1], R. MANU[1], C. SURESH[1], DASARATHA RAMAIAH[2]

[1]Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical education and research (RIPER) Autonomous, Ananthapuram, Andhra Pradesh, India.[2]MD, Head Department of Paediatrics, RDT Hospital, Bathalapalli, India.
E-Mail: deepuchiradeep@gmail.com

Abstract

Background: Neonatal sepsis is a life-threatening condition characterized by a dysregulated immune response to infection within the first 28 days of life. It remains a significant cause of neonatal morbidity and mortality, particularly in low- and middle-income countries.Objective: This review aims to provide a comprehensive overview of neonatal sepsis, including its classification, epidemiology, risk factors, common pathogens, treatment strategies, and preventive measures.

Methodology: A comprehensive literature review was conducted to gather current data on neonatal sepsis, with a particular focus on early-onset (EONS), late-onset (LONS), and very late-onset (VLOS) neonatal sepsis. The review covered articles published up to March 2023. We searched PubMed (MEDLINE), Scopus, Web of Science, Cochrane Library, Google Scholar, Global Burden of Disease (GBD) database. Search Terminology: A combination of MeSH terms and keywords was used. Studies published in English, Original research, meta-analyses, and systematic reviews.

Results: Neonatal sepsis affects an estimated 2,202 per 100,000 live births globally, with a higher incidence in preterm and low-birth-weight infants. EONS is primarily due to vertical transmission, while LONS is often hospital-acquired. Multidrug-resistant organisms complicate treatment. Preventive strategies such as intrapartum antibiotic prophylaxis, strict hygiene, and breastfeeding have reduced incidence and mortality.

Conclusion: Early recognition, timely antimicrobial therapy, and adherence to preventive protocols are critical in reducing the burden of neonatal sepsis. Improved maternal care, infection control, and monitoring of antimicrobial resistance are essential for better outcomes.

Keywords: Neonatal sepsis, Early-onset sepsis, Late-onset sepsis, Risk factors, antimicrobial resistance, Prevention, Neonatal mortality.

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BRIDGING THE GAP: CLINICAL PHARMACISTS AS THE LINK BETWEEN PATIENTS AND PHYSICIANS

G. MOHANA KRISHNA*, D. RAMESH REDDY, S. HAMEED BASHA, B. SAHITHI, S. SHAKIR BASHA, U. VEERENDRA

Raghavendra Institute of Pharmaceutical Education and Research, Chiyyedu, KR Palli Cross, Anantapur.
E-Mail: mk2862402@gmail.com

Abstract

Background:Clinical pharmacists play an increasingly vital role in healthcare, contributing to optimized medication therapy and patient safety. As healthcare systems evolve, their involvement in direct patient care bridges communication and knowledge gaps between physicians and patients.Objectives:This study aims to evaluate the impact of clinical pharmacists in enhancing communication, improving therapeutic outcomes, and promoting collaborative decision-making between healthcare providers and patients.

Methods:A prospective observational study was conducted across multidisciplinary hospital settings over six months. Data were collected through patient interviews, physician feedback, and clinical intervention records by pharmacists. Interventions were categorized and analyzed based on their clinical relevance and acceptance rates.

Results:Clinical pharmacists made 462 interventions, of which 88% were accepted by physicians. Medication-related problems were resolved in 91% of cases, and patient understanding of therapy improved significantly ($p < 0.01$). Collaborative rounds involving pharmacists led to a 25% reduction in medication errors and a 30% increase in patient adherence rates.

Conclusion:Clinical pharmacists serve as a crucial link between patients and physicians, enhancing communication, minimizing medication errors, and improving clinical outcomes. Their integration into healthcare teams supports more effective, patient-centered care.

Keywords: Clinical Pharmacists, Patient-Physician Communication, Medication Therapy Management, Interdisciplinary Collaboration, Healthcare Outcomes

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IDENTIFYING POTENTIAL SIGNALS RELATED TO ANTIMETABOLITES – INDUCED SECOND PRIMARY MALIGNANCIES: A DISPROPORTIONALITY ANALYSIS CONDUCTED USING THE FAERS DATABASE.

K. NOWMAN KHAN*, K. SUPRIYA, K. HEMANTH ESWAR, M. MANOJ KUMAR.

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER), Anantapur, India.
E-Mail: nowmankhan2015@gmail.com

Abstract

Background: Lung cancer, particularly non-small cell lung cancer (NSCLC), is a major cause of cancer deaths worldwide. ALK inhibitors have improved outcomes for patients with ALK-positive NSCLC. However, concerns about long-term safety, especially the risk of second primary malignancies (SPMs), are emerging. Investigating these issues is vital for optimizing patient care and improving long-term outcomes.

Objective: To assess potential signals of second primary malignancies (SPMs) related to Antimetabolites.Methodology: This retrospective case/non-case study was conducted from August 2024 to April 2025. Individual Case Safety Reports (ICSRs) were extracted from the U.S. FDA Adverse Event Reporting System (FAERS) database. Data for Antimetabolites were collected from their respective approval dates up to the fourth quarter of 2024 (2024Q4). All statistical analyses were performed using R Project software (version 4.4.2). Disproportionality analysis, including Reporting Odds Ratio (ROR) and Proportional Reporting Ratio (PRR), was employed to assess the association between Antimetabolites and the risk of second primary malignancies (SPMs).

Results: Disproportionality analysis among patients with lung cancer has identified potential safety signals associated with the occurrence of second primary malignancies (SPMs) following the administration of Antimetabolites. Notable signals have been detected for myelodysplastic syndrome (ROR 15.29; PRR 15.25), squamous cell carcinoma (ROR 9.27; PRR 9.26), rectal cancer (ROR 4.00; PRR 3.99), diffuse large B-cell lymphoma (ROR 3.51; PRR 3.51), and T-cell lymphoma (ROR 2.70; PRR 2.70). Solid malignancies were more common than hematological malignancies across all Antimetabolites.

Conclusion: The findings suggest Antimetabolites may be linked to the development of second primary cancers. Highlighting need for long term safety monitoring.

Keywords: Antimetabolites, FAERS, Second Primary Malignancy, Myelodysplastic syndrome, Squamous cell carcinoma.

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GOLD COMPOUNDS IN RHEUMATOID ARTHRITIS: CLINICAL INSIGHTS AND NANOTECHNOLOGICAL ADVANCEMENTS

SHAIK SHAMEER BASHA

Acharya Nagarjuna University, Guntur, Andhra Pradesh, India. E-Mail: shameer.ancp@gmail.com

Abstract

Background: Rheumatoid arthritis (RA) is a chronic autoimmune disease marked by persistent synovial inflammation and progressive joint damage. Although modern biologic agents and targeted synthetic DMARDs have transformed RA management, traditional therapies like gold-based compounds once played a significant role due to their immunomodulatory and anti-inflammatory effects.

Objective: To critically examine the pharmacological mechanisms, historical clinical relevance, and future prospects of gold compounds in the treatment of RA, especially in the context of emerging nanotechnological innovations.Methodology: This study involved a comprehensive literature review of both historical and recent research related to gold-based therapies for RA. Focus was placed on the mechanisms of action of traditional compounds (e.g., sodium aurothiomalate, auranofin), their clinical outcomes, and the development of advanced formulations such as gold nanoparticles (AuNPs) and gold(I) complexes.

Results: Traditional gold compounds demonstrated immunosuppressive effects by inhibiting lysosomal enzymes, suppressing macrophage function, and modulating cytokine activity. However, their clinical application diminished due to delayed onset, limited efficacy, and adverse effects. Recent innovations have introduced gold nanoparticles and novel gold complexes with improved pharmacokinetics, bioavailability, and safety profiles, showing promise in preclinical studies.

Conclusions: While traditional gold compounds have largely fallen out of favor in modern RA treatment due to safety and efficacy concerns, recent advancements in nanotechnology and drug delivery systems may revive their therapeutic potential. Further translational and clinical research is warranted to validate these emerging approaches and potentially reestablish gold compounds as viable DMARD options.

Keywords: Rheumatoid Arthritis (RA), Gold Compounds, Disease-Modifying Antirheumatic Drugs (DMARDs), Sodium Aurothiomalate, Auranofin, Immunomodulation, Gold Nanoparticles (AuNPs).

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IDENTIFYING POTENTIAL SIGNALS RELATED TO ALK INHIBITOR-INDUCED SECOND PRIMARY MALIGNANCIES: A DISPROPORTIONALITY ANALYSIS CONDUCTED USING THE FAERS DATABASE.

K. HEMANTH ESWAR*, K. NOWMAN KHAN, K. SUPRIYA, M. MANOJ KUMAR.

V Year, PharmD, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER), Anantapur, India.E-Mail: kasahemantheswar@gmail.com

Abstract

Background: Lung cancer, particularly non-small cell lung cancer (NSCLC), is a major cause of cancer deaths worldwide. ALK inhibitors have improved outcomes for patients with ALK-positive NSCLC. However, concerns about long-term safety, especially the risk of second primary malignancies (SPMs), are emerging. Investigating these issues is vital for optimizing patient care and improving long-term outcomes.Objective: To assess potential signals of second primary malignancies (SPMs) related to anaplastic lymphoma kinase (ALK) inhibitors.

Methodology: This retrospective case/non-case study was conducted from August 2024 to April 2025. Individual Case Safety Reports (ICSRs) were extracted from the U.S. FDA Adverse Event Reporting System (FAERS) database. Data for ALK inhibitors were collected from their respective approval dates up to the fourth quarter of 2024 (2024Q4). All statistical analyses were performed using R Project software (version 4.4.2). Disproportionality analysis, including Reporting Odds Ratio (ROR) and Proportional Reporting Ratio (PRR), was employed to assess the association between ALK inhibitors and the risk of second primary malignancies (SPMs), following established pharmacovigilance methodologies.

Results: Disproportionality analysis among patients with lung cancer has identified potential safety signals associated with the occurrence of second primary malignancies (SPMs) subsequent to the administration of ALK inhibitor therapy. Notable signals have been detected for breast cancer (ROR 8.66; PRR 8.53), brain neoplasms (ROR 6.58; PRR 6.16), and for SPMs overall (ROR 13.98; PRR 12.95). These findings primarily pertain to solid tumors and are consistent across all types of ALK inhibitors.

Conclusion: This analysis suggests that ALK inhibitor may be linked to the development of second primary cancers, especially in the breast and brain.

Keywords: ALK inhibitors; second primary malignancy; FAERS; Breast cancer; Brain neoplasm.

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IMPACT OF PATIENT COUNSELING ON MEDICATION ADHERENCE AND NEONATAL OUTCOMES IN GESTATIONAL DIABETES MELLITUS: A PROSPECTIVE OBSERVATIONAL STUDY

P. SAMPATH KUMAR REDDY[1], P. CHINNA DANNY[1], S. SREENIVAS[1], P. SREEVANI[1], A. SUDHEER[1],DR. M. JYOTHI SUCHITRA[2], DR. M. QUEENI SHAROON[1]

[1] Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Anantapur, Andhra Pradesh-India, [2] Department of Obstetrics and Gynecology, Rural Development Hospital, Bathalapalli, Anantapur, Andhra Pradesh-India. E-Mail: patil.sampath1904@gmail.com

Abstract

Background: Gestational Diabetes Mellitus (GDM) is a prevalent metabolic disorder affecting approximately 7–14% of pregnancies globally. If not managed appropriately, GDM can lead to serious maternal and neonatal complications. Medication adherence plays a crucial role in mitigating these risks; however, patients—especially in rural areas—often face challenges due to a lack of awareness and understanding. Patient counselling serves as an effective strategy to enhance adherence by educating and motivating patients. Improved adherence is associated with favourable neonatal outcomes, including reduced incidence of macrosomia and respiratory distress.

Objectives:To assess the impact of patient counselling on medication adherence among women with GDM, to correlate the effect of patient counselling on neonatal outcomes.

Methods:
A prospective observational study was conducted over six months. Women aged ≥18 years diagnosed with GDM were enrolled; those with pre-existing diabetes or other complications were excluded. A total of 84 participants were divided into two equal groups: counselling (n = 42) and non-counselling (n = 42). Medication adherence was measured using the Pregnancy Medication Adherence Scale (PMAS). Neonatal outcomes were recorded and analysed to determine the impact of counselling.

Results:Among the counselling group, 52.4% were fully adherent, 28.6% partially adherent, and 19.0% non-adherent. In contrast, the non-counselling group showed 23.8% full adherence, 31.0% partial adherence, and 45.2% non-adherence. A significant association was found between counselling and adherence (χ^2 = 9.021, p = 0.011). Neonatal outcomes also significantly differed between the groups (χ^2 = 3.941, p = 0.047): 83.3% of neonates in the counselling group had no complications compared to 64.3% in the non-counselling group. Complications like macrosomia and respiratory distress were notably lower in the counselling group.

Conclusion:Patient counselling significantly improves medication adherence in women with GDM, leading to better neonatal outcomes. These findings reinforce the need for integrating structured counselling sessions into antenatal care for optimal GDM management.

Keywords: Gestational Diabetes Mellitus, Medication Adherence, Patient Counselling, Neonatal Outcomes, PMAS (Pregnancy Medication Adherence Scale)

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HIDDEN CALORIES AND VISIBLE CONSEQUENCES WITH CARBONATED DRINKS

B.DIVYA SREE*, C.SURESH

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur, India.E-Mail: divyasreenaidu3@gmail.com

Abstract

Introduction:Carbonated drinks are widely consumed across all age groups due to their taste, affordability, and availability. However, these beverages are high in added sugars and contain little to no nutritional value. Regular intake contributes to excess calorie consumption, often without consumers realizing it.A single serving of carbonated drink contains up to 10 teaspoons of sugar, adding hidden calories that fail to satisfy hunger but significantly increase the risk of weight gain and obesity. Frequent consumption is also associated with a higher incidence of type 2 diabetes, liver damage, and metabolic disturbances. The glycemic load of sugary drinks can spike insulin levels and promote insulin resistance over time. The acidic content in carbonated drinks can erode dental enamel, leading to cavities and gastric ulcers. Caffeine may lead to dependency and cause dehydration. Phosphoric acid reduces calcium absorption, weakens bone density over time, and can lead to the formation of kidney stones.Despite the associated health risks, public awareness of the consequences remains limited. Enhancing awareness is crucial to encourage healthier drink choices and prevent lifestyle-related diseases.

Keywords: Carbonated drinks, Obesity, Type 2 diabetes, Insulin resistance, Caffeine, Phosphoric acid, Bone density.

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HAIR DYE POISONING INDUCED RHABDOMYOLYSIS: A RETROSPECTIVE STUDY OF PATIENTS IN A RURAL INTENSIVE CARE UNIT IN SOUTH INDIA

A.CHANDRA PRAKASH*, J.U. NIKITHA BAI, N.RAJITHA, HARISH HANDYAL, U. VEERENDRA

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur, India. E-Mail: achandraprakash2805@gmail.com

Abstract

Background: Hair dye poisoning, primarily due to paraphenylenediamine (PPD), is a medical emergency in certain regions, often leading to rhabdomyolysis - a severe condition involving muscle breakdown. Understanding its prevalence, clinical profile, and outcomes is critical for improving management. Objectives**:**This study aims to assess proportion of rhabdomyolysis in hair dye poisoning cases, describe its clinical features, evaluate patient outcomes, and analyze the interventions.

Methodology: The study received approval from the ethics committee and included data collected over two years (September 2022 to August 2024) from the Hospital Information System (HIS). Collected data was screened based on inclusion and exclusion criteria, and relevant cases of hair dye poisoning leading to rhabdomyolysis were entered into an MS Excel spreadsheet. Descriptive statistics will be used to present the data, with demographic details shown as frequencies and percentages, and other variables as mean, standard deviations, and ranges. Statistical analysis will be carried out using IBM SPSS version 22.

Results: This study analyzed 46 cases of PPD (hair dye) poisoning. Most patients were young females, with 97.8% developing rhabdomyolysis (CPK >750 IU/L). Common symptoms included cervico-facial edema, dysphagia, dyspnea, and dark-colored urine. Forced alkaline diuresis and mechanical ventilation were used in all cases, with tracheostomy required in 84.8%. Despite the severity, 91.3% of patients were discharged. Lab results showed extremely high CPK, AST, and LDH levels, and complications like acute kidney injury occurred in 17.4%. Most patients also had metabolic acidosis. These findings highlight the seriousness of PPD poisoning and the importance of timely intensive care interventions.

Conclusion: Rhabdomyolysis is nearly universal in severe hair dye poisoning, associated with multi-organ involvement, requiring early critical care interventions to reduce morbidity and ensure desired outcomes.

Keywords: Paraphenylenediamine (PPD), Hair Dye Toxicity, Rhabdomyolysis in Poisoning,Intensive Care Management

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ASSOCIATION OF SOCIAL DETERMINANTS OF HEALTH WITH THE INITIATION OF NEWER VS OLDER SECOND LINE ANTIDIABETIC MEDICATIONS AND TRENDS IN ANTIDIABETIC MEDICATION USE OVER TIME

SHRUTI CHAUDHARY*[1], SATYA SURBHI[2]

[1]Manipal College of Pharmaceutical Sciences. [2]University of Tennessee Health Science Center, Memphis, India.
E-Mail: chaudharyshruti113@gmail.com

Abstract

Background- Newer second-line antidiabetic medications including glucagon-like peptide 1 receptor agonists (GLP-1RA) and sodium-glucose cotransporter 2 inhibitors (SGLT2i), have proven cardiorenal and weight loss benefits, however evidence regarding their use among socioeconomically disadvantaged populations is limited.

Objective- This study examines the impact of social determinants of health (SDOH) on the initiation of newer versus older second-line antidiabetic medications including dipeptidyl peptidase-4 inhibitors (DPP-4i), sulfonylureas, and thiazolidinediones (TZDs) and looked at the prescribing pattern of Antidiabetic medications over time from 2017-2022.

Methods- This is a retrospective cross-sectional and cohort study using data from the Medical Expenditure Panel Survey (MEPS), a nationally representative sample of the civilian noninstitutionalized population of the United States.

Results- Among the 281 patients included in the study, 183 (65.1%) initiated newer antidiabetic medications, while 98 (34.9%) initiated older medications. Patients residing in neighborhoods with limited availability of medical care facilities had significantly lower odds of initiating newer antidiabetic medications compared to older ones (OR: 0.29, 95% CI: 0.09–0.88). Similarly, those reporting low or no family support were also less likely to initiate newer therapies (OR: 0.54, 95% CI: 0.30–0.98).Trend analysis over recent years revealed a consistent increase in the overall use of newer antidiabetic medications, such as GLP-1 receptor agonists and SGLT-2 inhibitors, while the use of older classes like sulfonylureas and DPP-4 inhibitors showed a declining trend. These findings highlight shifting prescribing patterns favoring newer therapeutic options.

Conclusion- This study underscores the significant impact of SDOH on the initiation of newer second-line antidiabetic medications among adults with diabetes, emphasizing the need to address social and environmental barriers to ensure equitable access to advanced diabetes therapies

Keywords: Social determinants of health (SDOH), MEPS (Medical Expenditure Panel Survey), Antidiabetic medications, Healthcare disparities, Vulnerable populations.

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EVOLUTION OF THERAPIES IN THE MANAGEMENT OF ABNORMAL UTERINE BLEEDING: A NARRATIVE REVIEW

M.SULEMAN*, K.JAHNAVI, N.NAGA LAKSHMI, M.JYOTHI SUCHITHRA, M.QUEENISHAROON

V Year, PharmD, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur, India.E-Mail: shaiksuleman8977@gmail.com

Abstract

Background:Abnormal uterine bleeding (AUB) is a common gynecological condition affecting women of reproductive age, significantly impacting quality of life and healthcare systems. Over the decades, the management of AUB has evolved from surgical interventions to a wide range of medical therapies, reflecting advances in understanding its treatment options. This narrative review aims to trace the historical progression and current approaches to managing AUB.

Objectives:The primary objective is to evaluate the evolution of therapeutic strategies for AUB, highlighting key milestones from traditional surgical methods to modern pharmacological and minimally invasive techniques. It also seeks to assess the effectiveness and safety of these interventions based on available evidence.

Methodology: This review synthesizes data from historical and contemporary literature, focusing on therapeutic advancements in AUB management. Narrative synthesis was employed, drawing from clinical studies, expert opinions, and clinical trial reports published over the past few decades, with an emphasis on evidence-based practices.

Results:The review identifies a shift from hysterectomy and dilatation and curettage to medical therapies such as hormonal treatments (e.g., combined oral contraceptives, progestins) and non-hormonal options (e.g., tranexamic acid). Additionally, minimally invasive procedures like endometrial ablation and the levonorgestrel intrauterine device (IUD) have gained prominence. Clinical trials and observational studies suggest improved outcomes with reduced morbidity compared to older methods.

Conclusion:The management of AUB has transformed significantly, offering safer and more effective options tailored to individual patient needs.

Keywords: Abnormal uterine bleeding, therapy evolution, hormonal treatment, endometrial ablation, levonorgestrel IUD.

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IMPACT OF PATIENT COUNSELLING ON MEDICATION ADHERENCE AND MATERNAL NEONATAL OUTCOMES IN GESTATIONAL DIABETES MELLITUS

P.SREEVANI*, S. SREENIVAS, P. SAMPATH KUMAR REDDY, P.CHINNA DANNY, M. QUEENI SHAROON,A.SUDHEER

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Ananthapuramu, Andhra Pradesh, India. E-Mail: posinasreevani@gmail.com

Abstract

Introduction: Gestational diabetes mellitus (GDM) is a common condition in high-risk cases in pregnancy.Gestational diabetes (GDM) is defined as a glucose intolerance resulting in hyperglycemia of variable severity with onset during pregnancy.

Aim:To evaluate the impact of patient counseling on medication adherence and maternal outcomes in patients with GDM.Study Objectives:To estimate medication adherence in pregnant woman receiving treatment for GDM patients and assess the pharmacist interventions on medication adherence in women with GDM, to correlate the effect of improved medication adherence on Maternal outcome.

Methodology:The study shows a significant association between antenatal counselling and maternal outcomes. Pre-eclampsia occurred less in the counselling group (9.5%) compared to the non-counselling group (26.2%), with a p value of 0.046. Spontaneous delivery was higher in the counselling group (57.1%) than in the non-counselling group (35.7%), with a p value of 0.049. Caesarean sections were more common without counselling. These results suggest that counselling improves pregnancy outcomes.

Result:Upto now 84 samples was divided into 2 groups i.e., counselling group(42) and non-counselling groups(42).and counselling group show high medication adherence and Maternal outcomes in patients with GDM.Conclusion:Therefore, the impact of patient counselling on medication adherence and maternal outcomes in patients with GDM is needed for the patient. It shows positive outcomes.

Keywords: Gestational diabetes mellitus (GDM), pregnancy, medication adherence, maternal outcomes.

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TELEMEDICINE IN TRANSITION: A GLOBAL AND INDIAN VIEW ON HEALTH OUTCOMES AND ECONOMIC SHIFTS

N. CHANDRA SEKHAR*, DR. M. MANOJ KUMAR.

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Ananthapuramu, Andhra Pradesh, India. E-Mail: chandrasekhar7616@gmail.com

Abstract

Background: India's healthcare system, serving over 1.4 billion people, is complex and evolving, involving both public and private sectors. Despite progress, it faces challenges such as inadequate infrastructure, shortage of professionals, urban-rural disparities, limited insurance coverage, and funding constraints. These issues contribute to inconsistent access and quality of care. The dual burden of communicable and noncommunicable diseases strain resources. Telemedicine emerges as a promising solution to enhance patient safety, disease management and medication adherence, potentially bridging gaps in access and care quality across India.

Objective: To explore telemedicine's role in transforming Indian healthcare and assess its impact on public health outcomes and economic growth, compared with global trends.Key Points: Introduced in 1959 and expanded in India by ISRO's 2001 Apollo project, telemedicine addresses access gaps—vital given India's 68.84% rural population and urban-centric infrastructure. With only 3.9% of GDP allocated to health and a doctor-patient ratio of 1:1457, platforms like eSanjeevani and Swasth connect rural and specialty centers, reducing travel costs and enhancing chronic care. During COVID-19, 22% and 33% used telemedicine for physical and mental health respectively.It improves patient engagement and reduces hospitalizations. Backed by Practo ($251M) and 1mg ($230M), India's telemedicine market could reach $5B by 2030. Globally, the sector drew $4.2B in 2021, with consultation revenue projected at $35.83B by 2028. AI, 5G, and blockchain boost potential, though India must address internet access, regulation, training, digital literacy, and privacy. The National Digital Health Blueprint aids standardization, but inclusive execution is vital.

Conclusion: Telemedicine is reshaping healthcare by lowering costs and connecting remote areas. Despite hurdles, technological advances and unified policies can ensure a more inclusive, efficient global healthcare future.

Keywords: Telemedicine, health economics, public health, digital literacy

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ASSESSMENT AND IMPACT OF COGNITIVE IMPAIRMENT ON MEDICATION ADHERENCE IN PATIENTS WITH CORONARY ARTERY DISEASE USING MOCA AND ACD SCALES: A PROSPECTIVE COHORT STUDY

T.RAKESH KUMAR*, N.CHANDRA SEKHAR, J.SANGEETHA BAI, M.MANOJ KUMAR

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research(RIPER)-Autonomous, India.
E-Mail: rakeshkumarthotakura@gmail.com

Abstract

Background: Cognitive impairment is one of the globally prevalent disease conditions that is most underdiagnosed and can develop into dementia and further to Alzheimer's if not detected in early stages. There are studies that demonstrate the cognitive impairment in coronary artery disease patients and also the effect of cognitive impairment on medication adherence in various health conditions where it leads to lowering of quality of life.

Objectives: To assess the cognitive impairment in coronary artery disease patients and its impact on medication adherence by using the MOCA and ACD scales.

Methodology: A six-month prospective cohort study was carried out at KIMS Saveera, a tertiary care hospital in Anantapur. With IRB approval, data on coronary artery disease patients were collected from cardiology case records based on the study's inclusion and exclusion criteria. Information gathered included demographics, medical history, surgical details, diagnosis, BMI, lab results, and discharge prescriptions. Cognitive impairment in eligible coronary artery disease patients was assessed using the MOCA scale, and its impact on medication adherence was evaluated at a 3-month follow-up using the ACD scale.

Results: Cognitive impairment assessment has been done by the MOCA scale in 226 coronary artery disease patients. Out of 226 participants, 66 participants were identified with cognitive impairment by using the MoCA scale. The prevalence of cognitive impairment among CAD participants is 29.21 %. The prevalence of medication non-adherence in cognitively impaired CAD patients is 78.7%, and in non-cognitively impaired CAD patients, it is 24.3 %. Nearly 55% difference when compared with non-cognitively impaired patients' medication non-adherence.Conclusion**:** This observational study reveals a link between cognitive impairment and CAD, showing that nearly one-third of CAD patients develop cognitive issues, with four out of five of them exhibiting low medication adherence.

Keywords: Cognitive Impairment, Medication adherence, Coronary artery disease, MoCA score, ACD score

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BRIDGING DISTANCES IN HEALTHCARE: JIYYO MITRA E-CLINIC'S IMPACT ON PAEDIATRIC CARE AMID COVID-19

S. HAMEED BASHA*, DEEPAK KUMAR PUNNA, ANURAG GUPTA, ARUN PACHAURI, VIVEKRAJ MAHESHWARI

S. Hameed Basha, Pharm.D, Raghavendra Institute of Pharmaceutical Education and Research, Chiyyedu, KR Palli Cross, Anantapur – 515721, Andhra Pradesh, India. Email ID: shaikhameed.klm@gmail.com

Abstract

Introduction:Nephrotic syndrome is a kidney disorder characterized by proteinuria, hypoalbuminemia, edema, and hyperlipidemia. In children, it often leads to repeated relapses requiring close monitoring. During the COVID-19 pandemic, access to physical healthcare became challenging, especially in rural areas. Telemedicine emerged as an effective solution for ensuring continuity of care.

Aim:To evaluate the effectiveness of telemedicine via Jiyyo Mitra E-Clinic in managing pediatric nephrotic syndrome during the COVID-19 pandemic.Objectives:To describe the clinical management of a pediatric patient with nephrotic syndrome using teleconsultation, to assess the feasibility and outcomes of remote follow-ups and treatment modifications, to highlight the role of accessible e-health platforms in chronic disease care during health crises.

Methodology:A retrospective case report was conducted on a 4-year-old girl diagnosed with nephrotic syndrome. Over three years, 25 teleconsultations were conducted via Jiyyo Mitra E-Clinic. The patient's clinical status, urine albumin levels, medication records, and symptoms were continuously monitored and managed remotely.

Results:Through regular video consultations, the patient achieved multiple periods of remission despite experiencing frequent relapses and associated infections. The use of corticosteroids (prednisolone), antibiotics, antihypertensives, and nutritional supplements was optimized based on remote evaluations. Timely access to consultations reduced the need for physical hospital visits and lessened the economic burden on the family.

Conclusion:This case demonstrates that telemedicine is a valuable tool for managing chronic paediatric illnesses such as nephrotic syndrome, especially in resource-limited settings and during pandemic conditions. Jiyyo Mitra E-Clinic enabled continuous care, early intervention, and improved patient outcomes without compromising the quality of treatment.

Keywords: Nephrotic Syndrome, Telemedicine, Paediatric Care, COVID-19, Remote Monitoring, Jiyyo Mitra E-Clinic

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EVALUATION OF THUNBERGIA FRAGRANS EXTRACT ON CELL VIABILITY AND NUCLEASE ACTIVITY IN LPS-STIMULATED RAW 264.7 MACROPHAGES - IMPLICATION FOR ANTI-INFLAMMATORY POTENTIAL

K.S. BHARATH*, P. MURALIDHARAN

Department of Pharmacology, Chettinad School of Pharmaceutical Sciences, Chettinad Hospital and Research Institute, Chettinad Academy of Research and Education, Kelambakkam, Tamil Nadu, India – 603103 E-Mail: bharathks1111@gmail.com

Abstract:

Background: Thunbergia fragrans is a medicinal plant traditionally used for its anti-inflammatory properties. However, its mechanistic cellular effects, particularly on macrophage-mediated inflammation, remain underexplored. Evaluating cytotoxicity and nuclease activity can provide insights into its therapeutic potential in inflammatory conditions.

Objective: To evaluate the cytotoxic profile and nuclease activity of *Thunbergia fragrans* (TF) extract on LPS-induced RAW 264.7 murine macrophages and determine its anti-inflammatory implications.

Methods: RAW 264.7 cells were stimulated with lipopolysaccharide (LPS, 1 µg/mL) and treated with increasing concentrations of TF extract (50–400 µg/mL). Cell viability was assessed using the MTT assay in triplicate, and DNA/RNA integrity was evaluated by agarose gel electrophoresis and absorbance at 260 nm to calculate nuclease activity. Statistical significance was determined ($p < 0.01$). Results: Low concentrations of TF extract (50–200 µg/mL) showed minimal impact on cell viability (94–98%). At 300 µg/mL, viability reduced to 90%, and at 400 µg/mL, a significant decrease to 65% was observed ($p < 0.01$), indicating cytotoxicity. DNA integrity analysis revealed a dose-dependent increase in nuclease activity, with values ranging from 5% at 50 µg/mL to 70% at 400 µg/mL. Moderate nuclease activity (25–40%) was observed at 200–300 µg/mL, suggesting degradation of extracellular nucleic acids.

Conclusion:*Thunbergia fragrans* extract exhibits concentration-dependent effects on cell viability and nuclease activity in inflamed macrophages. Moderate nuclease activity at non-toxic concentrations suggests potential anti-inflammatory effects via degradation of pro-inflammatory extracellular nucleic acids. These preliminary results highlight the need for further in vivo and mechanistic research to substantiate the therapeutic potential.

Keywords:*Thunbergia fragrans*, Anti-inflammatory, RAW 264.7, MTT assay, Nuclease activity, DNA degradation, LPS-induced inflammation.

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A STUDY ON OBSERVING THE RATE OF SURGICAL SITE INFECTIONS IN BOTH SINGLE DOSE AND THREE DOSE CEFAZOLIN IN PATIENTS UNDERWENT HYSTERECTOMY

P. VARSHITHA, M. MANOJ KUMAR

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER) Autonomous, Chiyyedu Post, Ananthapur-515721E-Mail: varshitaperla@gmail.com

Abstract

Background: site infections (SSIs) following hysterectomy led to longer hospital stays, increased healthcare costs, and contribute to antibiotic resistance. Cefazolin is widely utilized for surgical prophylaxis, yet the optimal dosing—single versus three doses—remains uncertain. This study aims to compare the effectiveness of both regimens in reducing SSIs.

Objectives: The study investigates the effectiveness of a single dose of cefazolin vs. three doses in promoting wound healing after a hysterectomy and examines the infection rates at the surgery site in patients receiving either one or three doses of cefazolin.

Methods: This is a comparative observational study that included 160 participants divided into two groups. The single-dose (1g) and three-dose (3g) cefazolin groups critically evaluated the data using a T-test and a chi-square test, respectively. The study establishes a fundamental comparison regarding the length of hospital stay, infection rate, and other adverse effects as the primary components.

Result: The duration of hospital stay was comparable between both groups, as indicated by a p-value of 0.178. Furthermore, the administration of a three-dose regimen of cefazolin resulted in a 47% reduction in surgical site infections, with no statistically significant difference in adverse effects, as evidenced by a p-value of 0.034. This data highlights a significant difference in wound healing between the three-dose cefazolin regimen and a single dose. Therefore, it can be concluded that a three-dose cefazolin regimen is more efficacious than a single dose.

Conclusion: The three-dose cefazolin offers superior infection control over time compared to a single dose in low-risk patients, reducing unnecessary antibiotic use.

Keywords: Hysterectomy, Cefazolin, wound-healing, Surgical site infections, Side effects.

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DYNAMIC SMART CONTRACTS & INTEGRATED BLOCKCHAIN-AI-IOT FRAMEWORKS FOR PERSONALIZED HEALTHCARE: APPLICATIONS IN THE INDIAN HEALTHCARE SECTOR

KABEER HADI*, M. MANOJ KUMAR

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER) Autonomous, Ananthapuramu, Andhra Pradesh, India – 515721.E-Mail: kabeerhadi1988@gmail.com

Abstract:

Background: The digitization of healthcare highlights the need for secure, interoperable, patient-centric systems. Blockchain, AI, and IoT hybrid models can provide this. Dynamic smart contracts within these models ensure automated, tamper-evident management of patient data—essential for India's healthcare, hindered by infrastructure limitations and fragmentation.

Objective: This systematic review aims to assess the state-of-the-art in implementing dynamic smart contracts within integrated blockchain-AI-IoT for personalized healthcare, specifically focusing on applications in India. It seeks to identify advantages, synthesize challenges, and propose avenues for future research.

Methods: A systematic literature was performed on PubMed, IEEE Xplore, Scopus, and Web of Science for articles from January 2016 to April 2025. Twenty peer-reviewed articles were found using specific keywords and strict criteria. Data extraction focused on system architecture, application domains (e.g., electronic health records, remote patient monitoring, pharmaceutical supply chain), outcomes, and challenges like scalability, interoperability, and regulatory compliance.

Results: The review summarized findings from studies, indicating that dynamic smart contracts automate consent management, enhance data security, and support real-time analytics. However, challenges remain in scalability, energy consumption reduction, and compatibility with legacy healthcare systems in India. Pilot implementations of personalized healthcare models showed success, but gaps exist in large-scale real-world verifications.

Conclusion: Smart contracts in integrated blockchain–AI–IoT systems promise to revolutionize Indian personalized healthcare. Focused pilot projects and standardization will be crucial for large-scale adoption.

Keywords: Blockchain; Smart Contracts; Artificial Intelligence; IoT; Personalized Healthcare; Indian Healthcare; Data Security; Interoperability.

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LATENT TUBERCULOSIS: A CLINICAL OVERVIEW OF DIAGNOSIS AND MANAGEMENT STRATEGIES

C. LAKSHMI SREE*, T. AMRUTHA, K. SAI DIVYA, M. MANOJ KUMAR

Raghavendra Institute of Pharmaceutical Education and Research, Anantapur, Andhra Pradesh, India.
E-Mail: amruthatallam2004@gmail.com

Abstract

Background: Latent tuberculosis infection (LTBI) is a dormant state of Mycobacterium tuberculosis in the host without clinical manifestations or infectivity. Despite the absence of symptoms, individuals with LTBI are at risk of progressing to active TB, particularly when immune function is compromised. Managing LTBI is vital to reducing the global TB burden and achieving the goals of TB elimination programs.

Objective: To provide an in-depth review of the diagnostic approaches and management strategies for latent tuberculosis, with emphasis on current guidelines and treatment regimens.

Methods: A literature review was conducted using data from peer-reviewed journals, WHO and CDC guidelines, and national programmatic protocols. The review covered immunological diagnostic tests, treatment options, risk stratification, and public health implications.

Results: LTBI diagnosis relies primarily on the Tuberculin Skin Test (TST) and Interferon-Gamma Release Assays (IGRAs), both of which identify immune sensitization to TB antigens. Exclusion of active disease through clinical and radiographic assessment is crucial before initiating therapy. Treatment regimens include isoniazid monotherapy for 6–9 months, rifampicin for 4 months, or a combination of isoniazid and rifapentine for 3 months. Preventive therapy is strongly recommended for high-risk groups, such as people with HIV, close contacts of active TB cases, and those undergoing immunosuppression. Adherence to therapy and monitoring for hepatotoxicity are critical components of care.

Conclusion: Latent TB represents a significant opportunity for intervention in TB control efforts. Early identification and appropriate treatment of LTBI can prevent progression to active TB, thereby reducing transmission and aiding in national and global TB elimination goals.

Keywords: Latent tuberculosis, LTBI, diagnosis, TST, IGRA, isoniazid, rifampicin, TB elimination, preventive therapy.

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A STUDY TO EXPLORE THE PREVALENCE OF POSTPARTUM DEPRESSION AMONG WOMEN IN RURAL AND URBAN AREA OF BENGALURU

BHOOMIKA V, SAHANAKUMARI R, APOORVA DEV M

Department of Pharmacy Practice, East West College of Pharmacy, Sagar Hospitals, Bengaluru, India.
E-Mail: sahanagowdar1999@gmail.com

Abstract

Background: Postpartum depression (PPD) is a significant mental health concern affecting 13–19% of mothers globally. It can impair a mother's ability to manage stress, function productively, and contribute to her community. Addressing PPD is crucial for ensuring maternal and child well-being, especially in settings with limited resources and awareness.

Objective: The study aimed to investigate the prevalence of postpartum depression among women in neonatal care, identify contributing risk factors, conduct awareness programs, and compare prevalence rates between rural and urban areas.

Methods: A community-based cross-sectional study was conducted over six months in Bengaluru, involving 569 post-delivery women attending primary health centres and Anganwadi centres in both rural and urban regions. A self-structured questionnaire was used to collect socio-demographic, pregnancy, and delivery-related data. The Edinburgh Postnatal Depression Scale (EPDS) was employed to assess depression levels among participants.

Results: The overall prevalence of postpartum depression was found to be 17.2% (98 out of 569). Women aged between 20–35 years were at the highest risk (95.9%). Key risk factors associated with PPD included age at marriage, maternal occupation and education, gender of the newborn, family support, and pregnancy-related comorbidities. Differences in prevalence were also observed between rural and urban populations. The study emphasized the need for early identification of symptoms, timely medical referral, and emotional support for affected mothers.

Conclusion: The study highlights the urgent need for structured intervention plans targeting the identified risk factors. Promoting awareness, early detection and counselling can significantly improve the emotional well-being of postpartum women.

Keywords: Postpartum Depression, Risk Factors, Edinburgh Postnatal Depression Scale, Maternal Health, Community Awareness Programs.

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A STUDY TO ASSESS KNOWLEDGE, ATTITUDE AND PRACTICE OF PHARMACISTS ON RATIONAL USE OF ANTIBIOTICS AND RESERVED ANTIBIOTICS IN BENGALURU

SURAJ B S*, SWATHI RAMESH, VARUN A, MOUSUMI DATTA

Department of Pharmacy Practice, East West College of Pharmacy, Sagar Hospitals, Bengaluru, India.
E-Mail: sudhakarsuraj14@gmail.com

Abstract

Background: Antibiotics treat bacterial infections, crucial for saving lives but misuse leads to resistance. Resistance develops naturally but misuse accelerates it. Global reports highlight concerning resistance rates in common infections like E. Coli. Reserved antibiotics are last resort for multi-drug-resistant infections (e.g., colistin). Proper antibiotic use via culture tests reduces resistance, aztreonam improves patient outcomes, and decreases hospital stays. Pharmacists need better understanding to curb misuse, enhance care, and combat resistance, preserving antibiotics' efficacy and saving lives.

Objective: To find out the knowledge, attitude, and practice of rational use of antibiotics and reserved antibiotics, to ascertain the prevalence of rational use of antibiotics and to assess the prevalence of rational use of reserved antibiotics.

Methods: A cross-sectional observational questionnaire-based study was conducted for pharmacists in Bengaluru. The research enrolled 500 pharmacists from various pharmacies who satisfy the inclusion criteria. Consent was obtained from all enrolled pharmacist. A questionnaire was distributed to the study participants prior to creating awareness. Knowledge regarding antimicrobial dispensing was provided with the help of information leaflets. The data collected was analysed using appropriate statistical tests and reported.

Results: Only 9% of pharmacists had above-average knowledge about antibiotics, while 91% had below-average knowledge. 38% of pharmacists had an above-average attitude towards antibiotic use, while 62% had a below-average attitude. 30% of pharmacists reported above-average practices, while 44% reported below-average practices regarding antibiotic use. The, the prevalence of rational use of antibiotics was found to be 43% and irrational use of antibiotics was found to be 57%. The prevalence of rational use of reserved antibiotics was found to be 58% and irrational use of antibiotics was found to be 42%.

Conclusion: As a conclusion study among pharmacists in Bengaluru found that educational programs and training are required to improve knowledge, attitude, and practices towards rational antibiotic use. Implementing health educational programs can promote appropriate use of antibiotics, enhancing patient quality of life and reducing hospital stays.

Keywords: Antibiotics, Resistance, Multi-drug-resistant infections, Rational use, Reserved antibiotics.

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PHARMACOLOGICAL EVALUATION OF ALLICIN AGAINST OBESITY IN RATS

JOSHUA ANTHONY VOMO*, KANALA SOMASEKHAR REDDY, PAPIREDDYPALLI SUSHMA BUKKE GEETHANJALI, TAMMISETTY REDDY HARINI GANGA

Department of Pharmacology, Raghavendra Institute of Pharmaceutical Education and Research, K.R. Palli Cross, Anantapur, Chiyyedu, Andhra Pradesh-515721-India E-Mail: joshua.anthony.vomo@gmail.com

Abstract

Background: Allicin is a bioactive compound found in garlic, has been traditionally recognized for its antioxidant and anti-inflammatory properties. Given the growing interest in natural compounds for obesity treatment and the reported lipid-lowering and antioxidant effects of allicin this study was designed to evaluate its anti-obesity activity in a rat model.

Objective: Evaluation of anti-obesity activity of the allicin against cafeteria diet induced obesity.

Methods: Obesity was induced in male Wistar rats by feeding a cafeteria diet for 35 days. Rats were randomized into six groups: normal control (standard chow diet), cafeteria diet (CFD), CFD + Orlistat (30 mg/kg), CFD + Atorvastatin (40 mg/kg), CFD + Allicin (100 g/kg), and HFD + Allicin (200 mg/kg). Drug administration commenced on 21st day and continued up to 35th day after the induction of the disease. Body weight, lipid parameters, oxidative stress markers and organ weights were assessed.

Results: Allicin at 200 mg/kg significantly reduced weight gain in obese rats compared to the negative control. Allicin also improved lipid profiles by decreasing total cholesterol, LDL and triglycerides while increasing HDL. Furthermore, it enhanced antioxidant activity by increasing SOD, CAT and glutathione levels and decreasing MDA. Allicin also reduced the weight of the liver, kidney, heart and spleen. These findings suggest that the anti-obesity activity of allicin may be attributed to its ability to modulate lipid metabolism and reduce oxidative stress.

Conclusion: The significant improvements observed in lipid profiles and antioxidant parameters indicate that allicin could be a promising natural compound for the management of obesity and its associated complications. Further in vivo and clinical studies required to investigate efficacy and safe of the allicin in the management of obesity.

Keywords: Allicin, Anti-obesity, Phytoconstituents, Lipid metabolism and Antioxidant activity.

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A COMPREHENSIVE STUDY ON TYPE 2 DIABETES MELLITUS (T2DM): EXPLORING AND ADDRESSING THE BARRIERS AND FACILITATORS

LALANA M, TEJASARADHYA N, DR. PRATYUSH MIGLANI

Department of Pharmacy Practice, East West College of Pharmacy, Sagar Hospitals, Bengaluru, India.
E-Mail: lalanamshetty@gmail.com

Abstract

Background: Diabetes mellitus is a long-term metabolic condition marked by high blood glucose levels that can cause major problems for a number of organs. India is particularly affected, and its incidence is increasing worldwide.

Objective: To investigate the factors that help and hinder type 2 diabetes mellitus (T2DM) patients' ability to maintain glycemic control, measure medication compliance, and gauge their quality of life.

Methodology: Prospective observational research with 248 T2DM patients was carried out at Sagar Hospitals in Bengaluru. The Hill-Bone Medication Adherence Scale (HB-MAS), the updated Diabetes Quality of Life (DQOL) tool, and self-designed forms were used to gather data. For statistical analysis, SPSS version 20 was employed.

Results: The research found that elderly persons (54.4% over 60) made up the majority of participants, with 46.4% of participants being male. 60.5% of them had unhealthy eating habits, and a sizable share (87.5%) were physically inactive. Those with excellent HbA1c rose from 16.5% to 21.7% as glycemic management improved over time. From 37.0% to 2.01%, low medication adherence declined. The percentage of people with poor quality of life decreased from 55.6% to 3.7%.

Conclusion: T2DM patients' quality of life is greatly improved by addressing glycemic control hurdles and enhancing medication adherence. It is crucial to implement interventions that emphasize patient education and lifestyle modifications.

Keywords: Diabetes Mellitus, Type 2 Diabetes, Glycemic Control, Medication Adherence, Quality of Life.

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AI-ENABLED PREDICTIVE ANALYTICS FOR RESOURCE ALLOCATION IN INDIAN HEALTHCARE: BALANCING EQUITY AND EFFICIENCY THROUGH REAL-WORLD DATA

T JASHUVA

Pharm D, Raghavendra Institute of Pharmaceutical Education and Research (RIPER) Autonomous, Ananthapuramu, Andhra Pradesh, India – 515721 E-Mail: jashuvat77@gmail.com

Abstract

Background: India's healthcare system is afflicted by the persistent inefficiencies and inequities. The primary divide, urban versus rural, low public revenue expenditure, and poor road and transport facilities, aggravate healthcare provision. There is too great a dependence on out-of-pocket expenses, which severely worsen disparities with regard to the marginalized and rural communities. Systematic problems, therefore, necessitate some rethinking of the way healthcare resources are allocated.

Objective: To evaluate how this AI predictive analytics potentially improves equity and efficiency in healthcare resource allocation in India by using real-world data to predict needs, optimize service delivery, and counter systemic disparities.

Methods: The research utilizes evidence, applications, and case studies in India and the world on the use of artificial intelligence algorithms in clinical databases such as electronic health records, demographic information, and epidemiology trends. It also looked at the ethical and regulatory frameworks governing AI in Indian health care. Case-based analysis shows the AI applications in the areas of disease outbreak prediction, management of patient flow, and medical diagnosis.

Results: AI-enabled predictive analytics bring much promise in predicting the impending spread of diseases, as well as optimizing the use of hospital resources and providing accurate diagnosis. Examples such as that of Apollo Hospitals in the cardiac risk prediction model and AI-based breast cancer screening provided by Niramai showcases the efficiency in operational terms and equitable access to healthcare. Challenges include data fragmentation, algorithmic bias, and privacy concerns.

Conclusion: AI-powered predictive systems can substantially enhance healthcare resource distribution in India when supported by inclusive datasets, transparent algorithms, and strong ethical oversight. Strategic implementation, policy support, and cross-sector collaboration are essential to ensuring that these technologies promote both efficiency and equity in healthcare delivery.

Keywords: Artificial Intelligence, Predictive Analytics, Healthcare Resource Allocation, Equity, Efficiency, Indian Healthcare, Machine Learning, Data Ethics, Public Health, Real-World Data.

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AI-ENHANCED WEARABLE DEVICES: REVOLUTIONIZING HEALTHCARE THROUGH ADVANCED ALGORITHMS, CONTINUOUS MONITORING, AND IMPROVED PATIENT OUTCOMES

P. HARSHA VARDHAN*, MELAM QUEENI SHAROON, M.MANOJ KUMAR

II Year, M. Pharm, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER), Autonomous, Anantapur. E-Mail: harshavardhanhcs12@gmail.com

Abstract

Background: Wearable devices facilitate remote care, continuous monitoring, and personalized health management, revolutionizing healthcare delivery. Devices such as fitness trackers and advanced biosensors are increasingly integrated with artificial intelligence (AI) and intricate algorithms to enhance their effectiveness in monitoring various medical conditions.

Objective: This review examines contemporary research pertaining to algorithms used in wearable devices designed to address specific medical conditions. It underscores the significance of artificial intelligence and the algorithms employed within these wearable devices.

Methods: Various devices are employed for measurement purposes, including retinographs, oximeters, accelerometers, among others. Furthermore, several algorithms exist to process, analyze, and interpret the data, such as XML and JSON. Machine learning utilizes support vector machines to analyze electrocardiogram (ECG) and electroencephalogram (EEG) data, while random forests, SMOTE, and DBSCAN serve as two pivotal preprocessing methods for detecting outliers and balancing datasets.

Results: The utilization of advanced machine learning algorithms, neural networks, and wearable sensors can substantially improve disease conditions and facilitate the effective interpretation of data.

Conclusion: AI-enhanced wearable devices have significantly improved the prediction and ongoing monitoring of patients, thereby facilitating effective treatment of various disease conditions. Future research endeavors may focus on enhancing the precision and efficiency of these sensors.

Keywords: Machine learning algorithms, Neural networks, AI, Biosensors, Wearable devices

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COMMUNITY-BASED NUTRITION OPTIMIZATION SYSTEM FOR INDIA: AI AND REAL-WORLD DATA FOR SCALABLE, PATIENT-CENTRIC PUBLIC HEALTH NUTRITION

N K MARIYA NAAZ*

Pharm D PB, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research, Autonomous.
E-Mail: mariya482486@gmail.com

Abstract

Background: India suffers from recurring regional nutrition disparities, with widespread undernutrition and micronutrient deficiencies plaguing large sections of the population, particularly rural and tribal groups. Whereas Nutritional AI has been focused primarily on individuals, a data-driven, community-level strategy is needed to prevent nutritional injustices.

Objectives: To create and validate an AI-driven platform that leverages real-world Indian nutrition and agriculture data to inform community-specific nutrition plans, taking into account regulatory guidelines, cultural diversity, and patient participation.

Methods: CBNOS combines Indian real-world datasets such as NFHS (National Family Health Survey), ICDS (Integrated Child Development Services), food supply data, and regional agricultural statistics. Based on these, the system determines community-specific nutritional deficiencies, food availability, and season-related challenges. AI models produce community meal plans that are tailored to resources being limited, suggest locally specific crop diversification to fill important micronutrient deficiencies (e.g., iron, vitamin A, and zinc), and suggest dietary adjustments coordinated with culture. Community input and health outcomes inform interactive model adjustments, confirming alignment with patient-centered research approaches.

Results: Pilot studies based on data from states like Bihar, Odisha, and Madhya Pradesh, where malnutrition levels are high, show enhanced nutritional sufficiency, food losses, and higher community engagement. The system supports India's National Nutrition Mission (Poshan Abhiyaan) and scalable integration with government nutrition programs.

Conclusions: CBNOS is a first-of-a-kind, AI-based, population-level solution specific to the distinct nutritional needs of India. It closes the loop among digital health, regulatory policy, and public health practice and provides a real-world-data-driven model for fighting community malnutrition using culturally relevant, patient-centered interventions.

Keywords: Nutrition AI, Real-World Data, Poshan Abhiyaan, Public Health, Digital Health, Community Nutrition, Patient-Centric Research.

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TANNIC ACID IN EFFECTIVE BLEEDING CONTROL NATURALLY: A NOVEL APPROACH TO HEMOSTASIS

C. ASWARTHAMMA*, A. NAGA CHANDRIKA, D.MAHESH, B.CHANDANA, ABDALLA GOUMA ALI GOUMA, BANDLAPALLI CHARITHA

Department of Pharmaceutics, Raghavendra Institute of Pharmaceutical Education and Research, K.R. Palli Cross, Chiyyedu, Ananthapuramu, Andhra Pradesh-515721. Email: Charithabandlapalli1998@gmail.com

Abstract

Objective: Uncontrolled bleeding poses a significant risk in both clinical and emergency scenarios, necessitating the development of effective haemostatic agents that are both efficient and biocompatible.

Methods: This study introduces a novel topical formulation comprising tannic acid, ascorbic acid, peppermint oil, and a sodium phosphate buffer at physiological pH (7.0), aiming to synergistically enhance homeostatic efficacy and promote wound healing.

Results and Conclusion: Tannic acid, a plant-derived polyphenol, exhibits potent astringent properties that facilitate vasoconstriction and protein precipitation, accelerating clot formation. Its ability to bind with proteins and form protective barriers over wounds contributes to rapid hemostasis. Ascorbic acid (vitamin C) plays a pivotal role in collagen synthesis and tissue repair, supporting the structural integrity of the wound site and enhancing the healing process. Peppermint oil, rich in menthol and polyphenolic compounds, offers antimicrobial and anti-inflammatory benefits, reducing the risk of infection and providing a soothing effect upon application. The sodium ortho phosphate buffer maintains the formulation's pH at a physiological level, ensuring stability and minimizing tissue irritation.

Keywords: Tannic acid, Ascorbic acid, Hemostasis.

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COLON-TARGETED NANOVESICULAR DELIVERY OF BAICALEIN AND MORIN: A NOVEL THERAPEUTIC STRATEGY AGAINST ULCERATIVE COLITIS

K. BAKTHABANDHAVI*[1,2], A. SUDHEER[2], SRINIVAS MUTALIK[3], E. BHARGAV[2],C. NARESH BABU[2]

[1]Research Scholar, RERDS-CPR, MAHE, Manipal, [2]Raghavendra Institute of Pharmaceutical Education and Research (RIPER), K.R.Palli Cross, Ananthapuramu, [3]Manipal College of Pharmaceutical Sciences (MCOPS), Manipal
Email:kothakotabhakthabandhavi@gmail.com

Abstract

Background: Ulcerative colitis (UC), a debilitating inflammatory bowel disease, presents significant therapeutic challenges due to recurrent symptoms, mucosal damage, and systemic side effects from conventional treatments.

Objective: This research proposes a colon-specific drug delivery system utilizing nanovesicles encapsulating the polyphenolic flavonoids, baicalein and morin, to enhance therapeutic efficacy and minimize adverse effects. The strategy involves formulation of enzyme-responsive nanovesicles using natural polymers like chitosan and guar gum for targeted delivery, leveraging their biocompatibility and stability in the gastrointestinal tract.

Methods: Pre-formulation studies include solubility, partition coefficient determination, and compatibility analyses via FTIR and DSC. The optimized nanovesicles are characterized by size, zeta potential, entrapment efficiency, and morphology using SEM and TEM. In vitro drug release and stability studies are conducted to assess performance under gastrointestinal conditions. An acetic acid-induced UC model in Wistar rats is employed to evaluate therapeutic efficacy, analyzing disease activity index, macroscopic colon damage, inflammatory markers, oxidative stress levels, and histopathological changes.

Results and Conclusion: Results are expected to demonstrate superior mucosal healing and anti-inflammatory effects from coated formulations compared to uncoated drugs and standard therapies. This work addresses critical gaps in current UC management by offering a site-specific, safer, and more efficient natural therapy, potentially advancing future clinical approaches.

Keywords: Ulcerative colitis, Colon-targeted drug delivery, Nanovesicles, Flavonoids, Anti-inflammatory therapy

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PREPARATION AND EVALUATION OF CILOSTAZOL NANOPARTICLES

GUDISIPALLI SIVANANDU, KUNTIMALLA RAJESH, BANDLAPALLI CHARITHA

Raghavendra Institute of Pharmaceutical Education and Research (RIPER) – Autonomous, K.R.Palli Cross, Ananthapuramu – 515721. Email: charithabandlapalli1998@gmail.com

Abstract

Background: Uncontrolled bleeding poses a significant risk in both clinical and emergency scenarios, necessitating the development of effective haemostatic agents that are both efficient and biocompatible.

Objective: This study introduces a novel topical formulation comprising tannic acid, ascorbic acid, peppermint oil, and a sodium phosphate buffer at physiological pH (7.0), aiming to synergistically enhance homeostatic efficacy and promote wound healing.

Methods and Results: Tannic acid, a plant-derived polyphenol, exhibits potent astringent properties that facilitate vasoconstriction and protein precipitation, accelerating clot formation. Its ability to bind with proteins and form protective barriers over wounds contributes to rapid hemostasis. Ascorbic acid (vitamin C) plays a pivotal role in collagen synthesis and tissue repair, supporting the structural integrity of the wound site and enhancing the healing process. Peppermint oil, rich in menthol and polyphenolic compounds, offers antimicrobial and anti-inflammatory benefits, reducing the risk of infection and providing a soothing effect upon application. The sodium ortho phosphate buffer maintains the formulation's pH at a physiological level, ensuring stability and minimizing tissue irritation.

Keywords: Ascorbic acid, antimicrobial, anti-inflammatory.

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MENTHOSOMES: A COMPREHENSIVE REVIEW

G. HIMA UDAYA SREE, K. VIGNESH, M. SIVASANKAR, K. SRUTHI

Raghavendra Institute of Pharmaceutical Education and Research (RIPER) – Autonomous, K.R.Palli Cross, Ananthapuramu – 515721 Email: vigneshkavali82@gmail.com

Abstract:

Objective: Menthosomes represent an innovative class of nanocarriers that combine menthol with lipid-based vesicles, typically phospholipids, to improve the delivery of therapeutic agents. The inclusion of menthol enhances the permeability of the skin and mucous membranes, making these carriers highly effective for transdermal and mucosal drug delivery.

Methods and Results: This review provides an in-depth examination of menthosomes, discussing their composition, preparation methods, and the mechanisms by which they enhance drug absorption and stability. Furthermore, it highlights the role of menthol in improving the bioavailability, solubility, and controlled release of encapsulated compounds.

Conclusion: The review also explores the broad potential applications of menthosomes in pharmaceutical and cosmetic industries, while identifying current challenges and suggesting future avenues for their development and optimization in drug delivery systems.

Keywords: Menthosomes, Permeability, Menthol, Bioavailability.

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A REVIEW ON ARTIFICIAL INTELLIGENCE (AI) IN PHARMACEUTICAL RESEARCH AND HEALTHCARE

B. K. YOGESH KUMAR*, B. SAHITHI

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)-Autonomous, Chiyyedu Post, Anantapur-515721. Email: bkyogeshnani@gmail.com

Abstract:

Objective: The AI has opened the door to reduce the trail errors, resources, time and cost. The current review article helps to give an overview about the AI ecosystem in different domains like drug design, drug screening, polypharmacology, execution of clinical trials, targeted action and witnessing toxicity.

Methods: An extensive set of tools are perceived and engaged in predicting the interactions, docking and structures of proteins, by employing the AI tools like iFitDock, AtomNet and Deep learning models like (DTIs) drug-target interactions and (DDIs) Drug drug interactions, RoseTTAFold, Delta Vina, and AlphaFold which is a revolutionary AI tool following it AlphaFold2 which is a subsequent version with improved speed and precision in predicting the protein structures. On the other hand, AI tools like ORGANIC (Objective-Reinforced GAN for Inverse-Design Chemistry), ADDISON, Kadurin's VAE-GAN Model are useful in drug design and molecular generation. Furthermore, Toxicity and Side effect prediction by using Tox_(R)CNN, DeepTox. Additionally SIEVE Score (Similarity of Integration Energy Vector Score), Delta vina in Virtual screening and AI in clinical Decision and Diagnosis by using (DeepQA) IBM Watson and DL Models for Early Diagnosis.

Results: By engaging with this AI environment provoked a vast number of startups in many countries especially in the branch of Drug Design and De Novo Molecule Generation noted as the standigm (South Korea) , deep cure (USA) , Genome Biologics (Germany), in another coin Drug – Target Interaction prediction and matching identifies as DEargen (South Korea), Genome Biologics (Germany) and clinical trial data analysis in USA termed Bullfrog AI and Advanced Computational Techniques for Virtual screening by using quantum mechanics in Polar Quantum Biotech in (UK).

Conclusion: In future it will become one of the foundations of a new era in pharmaceutical research in transforming the discovery, design, screening, clinical to the effective and efficient ones which brings the better diagnosis and treatment facilities.

Key words: Artificial Intelligence(AI), Pharmaceutical research, Drug development, Toxicity, Screening, Clinical Management.

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PATIENT CENTERED RESEARCH WITH RESPECT TO CANCER DISEASE.

DHRUVA NARAYAN K*, PRIYA ARTHI J M, SAMBHRAMA H, RANJITHA K, PRIYANKA UDGIRE S.

Nargund college of Pharmacy, Bengaluru. Email: priyankasudgire@gmail.com

Abstract

Background: In the past two decades, many advances have been made to our understanding of cancer disease (CD) and the way we approach its treatment. Despite this, many questions remain unanswered, particularly those related to how the disease and its therapies impact outcomes that are most important to patients. There is currently a lack of guidance on how to best define and incorporate these patient-centered outcomes in CD research.

Objectives: To summarize the current state of patient-centered outcomes research in CD, identify gaps in knowledge and research, and highlight opportunities and methods for future patient-centered research agendas in CD.

Methods: An international interdisciplinary group of experts was assembled. The group identified top patient-centered outcomes in CD, reviewed available literature for each outcome, highlighted important discoveries and knowledge gaps, and formulated research recommendations.

Results: This paper presents a unique approach to engaging patients and stakeholders in research by describing a conference series focused on meaningfully integrating patients in each phase of the project. Through three meeting phases, patients were not only introduced to patient-centered research (PCR) concepts but they also led discussions about diabetes self-management and developed PCR questions. A total of 10 questions were developed, represented by four main areas of communication, patient knowledge and perceptions, cancer prevention, and cancer management. Through patient feedback, three research questions were each identified as immediate priorities for development into research project proposals. The group of people identified four themes around patient-centered outcomes as the focus of the statement. After a review of the literature and expert group discussion, we developed research recommendations.

Conclusion: Patient-centered outcomes are key to ascertaining whether and how CD and interventions used to treat it affect the way patients feel and function in their daily lives. Ample opportunities exist to conduct additional work dedicated to elevating and incorporating patient-centered outcomes in CD research.

Keywords: CD, PCR, Patient centered Research

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ANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR DETERMINATION OF LOPINAVIR AND RITONAVIR IN SOLID DOSAGE FORMS USING RP–HPLC.

P. CHIRANJEEVI, G. AKSHAYA, V. BHANU REKHA, K. CHINNA KONDANNA, J. DEEPIKA, K. HARI HARAN*

Department of Pharmaceutical Analysis, RIPER, Anantapur-515001.Email: kanakahari551@gmail.com

Abstract

Background: Lopinavir and Ritonavir are protease inhibitors approved by the FDA in 1996 and 2000, used individually and in combination to treat HIV-1 infection. RP-HPLC is the preferred method for simultaneous quantification with high resolution. Conventional approaches use phosphate or TFA buffers, which can precipitate, foster microbial growth, interfere with UV detection, and degrade column performance. A buffer-free RP-HPLC method offers simpler preparation, improved robustness and consistency, and cost-effective routine analysis.

Objective: Develop and validate a buffer-free RP-HPLC method for the simultaneous determination of lopinavir and ritonavir in solid dosage forms.

Methods: The mobile phase, acetonitrile: water (20:80, v/v), is vacuum-filtered through 0.45 µm membranes and sonicated for 10–15 minutes to remove particulates and gases. The HPLC system is purged of residual solvents and equilibrated at 1.0 mL/min until a stable baseline is achieved. Tablets are weighed, powdered, and dissolved in mobile phase, then sonicated, filtered, and diluted to prepare calibration and sample solutions. Separation occurs on a C18 column (250×4.6 mm, 5 µm) at 25 °C with 20 µL injections, detecting lopinavir at 240 nm and ritonavir at 238 nm. Validation per ICH Q2(R1) assesses linearity (10–50 µg/mL), precision, accuracy, LOD/LOQ, specificity, robustness, repeatability, system suitability, intermediate precision, ruggedness, and stability assessment.

Results: The optimized HPLC parameters show Ritonavir and Lopinavir with retention times of 11.742 and 13.147 minutes, respectively. Ritonavir had 6882 theoretical plates and a tailing factor of 1.4600, while Lopinavir showed 5512 plates and a tailing factor of 1.6895. The resolution between the two peaks was 2.206.

Conclusion: Buffer-free RP-HPLC method was successfully developed on a C18 column using an acetonitrile: water (20:80, v/v) mobile phase, demonstrating clear separation of lopinavir and ritonavir without the drawbacks of traditional buffers . Validation according to ICH Q2(R1) showed excellent linearity (10–50 µg/mL), precision (%RSD < 2%), accuracy (recoveries within 98–102%), specificity, and robustness, confirming the method's suitability for routine, cost-effective quality control of lopinavir and ritonavir in solid dosage forms.

Keywords: RP-HPLC, Lopinavir, Ritonavir, Method development.

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NEUROPROTECTIVE POTENTIAL AND MEMORY RETENTION EFFECT OF *AEGLE MARMELOS* ON SCOPOLAMINE-INDUCED AMNESIA IN SWISS ALBINO MICE

KOTHAMADHI YUVA VARDHAN, MANAPOTI SAI VAMSI, MANGE SAI MOUNIKA, TOLISAKU PRAMOD KUMAR, JAYARAMAPPA SRAVAN SAI, DR. A. SUDHEER*

Department of pharmacology, Raghavendra institute of pharmaceutical education and research, Anantapur, Andhra Pradesh, INDIA.Email: kvardhanyuva@gmail.com

Abstract:

Background: Alzheimer's disease (AD) is a progressive neurodegenerative disorder that significantly affects memory formation. In early AD, amnesia is primarily due to impaired encoding, consolidation, or retrieval of episodic memory. Scopolamine, a muscarinic receptor antagonist with anticholinergic properties, induces cognitive deficits similar to those observed in dementia, and is commonly used to model AD in animals.

Objectives: To induce amnesia using scopolamine, evaluate the neuroprotective effect of *Aegle marmelos* through biochemical estimations, and to assess histopathological changes following *Aegle marmelos* treatment.

Methods: This study evaluates the neuroprotective potential of the ethyl acetate fraction of *Aegle marmelos* (EFAM) in Swiss albino mice with scopolamine-induced amnesia. EFAM was administered orally at doses of 200 and 400 mg/kg for 30 days. Amnesia was induced using scopolamine (3 mg/kg, i.p.). Memory function was assessed using behavioral models including the elevated plus maze, Hebb-Williams maze, and novel object recognition test. Biochemical analyses measured brain levels of reduced glutathione (GSH) and malondialdehyde (MDA) to assess oxidative stress. Histopathological examination of brain tissue was performed to evaluate structural damage.

Results: EFAM significantly ameliorated scopolamine-induced memory deficits. Improvement in behavioral performance was indicated by a reduction in transfer latency, time to reach the reward chamber, and an increase in recognition index. EFAM treatment also restored antioxidant balance by increasing GSH and reducing MDA levels. Histological analysis revealed reduced neurodegeneration in EFAM-treated groups compared to the scopolamine control.

Conclusion: EFAM demonstrated significant neuroprotective effects in a scopolamine-induced mouse model of Alzheimer's disease. Its ability to improve cognitive behavior, restore antioxidant levels, and prevent neuronal damage suggests that *Aegle marmelos* may serve as a promising therapeutic agent for AD.

Keywords: Alzheimer's disease, Scopolamine, *Aegle marmelos*, Neuroprotection, Memory retention, Antioxidants.

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PHARMACOLOGICAL EVALUATION OF *PHYLLANTHUS MADERASPATENSIS* ON ACETIC ACID – INDUCED ULCERATIVE COLITIS IN RATS

VAGGU MAHESH, VADDEPOGULA ASEERVADAM, KATTUBADI KARISHMA, RASINKER SAI BHARGAVI, PEDDAKOTLA SAHITHI, KANALA SOMASEKHAR REDDY

Department of Pharmacology, Raghavendra Institute of Pharmaceutical Education and Research, K.R. Palli Cross, Chiyyedu, Ananthapuramu, Andhra Pradesh-515721. Email: vaggu.mahesh2020@gmail.com

Abstract

Objective: The present work is aimed to evaluate the hydroalcoholic extract of *Phyllanthus maderaspatensis* (HAEPM) against acetic acid induced Ulcerative Colitis (UC) in rats.

Methods: Male wistar rats (150–200 g) were divided into five groups: normal control group animals received normal saline for 8 days, disease control group animals received normal saline for 8 days and acetic acid (1ml of 4% v/v) on day 4 via rectally, standard group animals received sulfasalazine 500 mg/kg orally and acetic acid (1ml of 4% v/v) on day 4 via rectally, test group I and test group II animals received the HAEPM at doses of 200 mg/kg and 400 mg/kg bw respectively orally for 8 days and acetic acid (1ml of 4% v/v) on day 4 via rectally. At the end of study, Disease severity was assessed using the Disease Activity Index (DAI), macroscopic scoring, estimation of biochemical parameters (SOD, GSH, MDA, MPO), and histopathology of colon tissue were performed.

Results: Disease control group rats showed significant weight loss, diarrhea, rectal bleeding, and significant increase in oxidative stress markers (MDA, MPO) while significant reduction in antioxidant levels (SOD, GSH). HAEPM treated rats, particularly at 400 mg/kg, significantly mitigated these effects through improvement in DAI scores, Reduced weight loss, stool consistency abnormalities, and rectal bleeding, macroscopic scoring and normalization of anti – oxidant parameters. Histopathological examination revealed that HAEPM preserved mucosal integrity, reduced edema, comparable to disease control animals. The findings suggest that HAEPM exerts protective effects against Ulcerative colitis through its antioxidant mechanisms, likely due to the abundant presence of polyphenolic compounds.

Conclusion: Hydroalcoholic extract of *Phyllanthus maderaspatensis* demonstrated significant efficacy in alleviating acetic acid-induced colitis in rats, supporting its potential as a natural therapeutic agent in the treatment of ulcerative colitis. Further studies are needed to validate its post-treatment benefits and explore its efficacy in other experimental colitis models mimicking human IBD.

Keywords: Ulcerative Colitis, *Phyllanthus maderaspatensis,* Anti –oxidants.

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COST-EFFECTIVENESS OF PHARMACIST CARE IN DIABETES MANAGEMENT: A SYSTEMATIC COMPARISON ACROSS COUNTRY INCOME LEVELS (2020-2025)

G. MALLESWARE*, A. UMAVATHI, Z. IDA KRUPA OLIVE, U VEERENDRA

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research, Anantapur, Andhra Pradesh, India-515721. E-Mail: gollamallesware@gmail.com

Abstract

Background: This systematic review evaluates the cost-effectiveness of pharmacist-led interventions in diabetes management across country income levels from 2020 to 2025. Diabetes Mellitus imposes significant global economic burdens, particularly in low- and middle-income countries (LMICs). Pharmacists increasingly contribute to diabetes care through medication management, education, and collaborative models, necessitating pharmacoeconomic evaluations to inform policy.

Objective: The study aims to compare recent cost-effectiveness (CEA) and cost-utility (CUA) analyses of pharmacist interventions in diabetes, stratified by World Bank income classifications. **Methods:** A PubMed search identified primary studies and reviews published between April 2020 and April 2025. Inclusion criteria focused on English-language CEA/CUA studies or systematic reviews evaluating pharmacist-led diabetes care.

Results: Results revealed limited primary studies but highlighted key systematic reviews. High-income countries (HICs) demonstrated consistent cost-effectiveness, exemplified by U.S. studies showing favorable incremental cost-effectiveness ratios (ICERs) linked to clinical improvements. Upper-middle-income countries (UMICs), such as Brazil and Iraq, reported cost-effective interventions with robust QALY gains. However, LMICs and low-income countries (LICs) had fewer rigorous evaluations, with scoping reviews noting positive clinical outcomes but poor economic evidence quality. Despite methodological disparities, pharmacist involvement was consistently cost-effective across settings, driven by reduced complications and improved glycemic control.

Conclusion: The review underscores the need for enhanced pharmacoeconomic research in LMICs, adherence to reporting standards, and context-specific evaluations. Recommendations include prioritizing LMIC-focused studies, capacity-building for local research, and integrating pharmacists into scalable diabetes care pathways.

Keywords: pharmacist-led interventions, diabetes management, cost-effectiveness, country income levels, pharmacoeconomic studies.

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SIMULTANEOUS ESTIMATION FOR SELECTED ANTIVIRAL DRUGS BY USING RP-HPLC

P. CHIRANJEEVI[1*], S. ARFA FATHIMA[2], V. HARSHA VARDHAN REDDY[3], Y. KEERTHANA[4], A. LATHA SREE[5], G. MADHU SRI[6].

Raghavendra Institute of Pharmaceutical Educational & Research (RIPER) - Autonomous K. R. Palli Cross, Near SK University: Ananthapuramu (Dist.), Andhra Pradesh –515721. Email: gollaprolu.supriya2004@gmail.com

Abstract

Background: Antiviral medications are essential in treating viral infections by either blocking the replication of viruses or preventing them from entering host cells. As these infections become more common and combination antiviral therapies are widely used, there is an increasing need for analytical methods that are not only precise and effective but also capable of estimating multiple antiviral agents simultaneously in pharmaceutical formulations.

Objective: This research is centred on creating and validating a straightforward, accurate, and dependable Reverse Phase-High Performance Liquid Chromatography (RP-HPLC) technique for the simultaneous measurement of four frequently used antiviral drugs: Darunavir, Ritonavir, Tenofovir, and Emtricitabine.

Methods: The initial analysis of the chosen drugs was conducted using UV-Visible spectroscopy to identify their maximum absorbance (λ-max) values, and Fourier Transform Infrared (FT-IR) spectroscopy was used to verify the presence of functional groups. The method development utilized a C18 column and a mobile phase composed of acetonitrile and water in a 20:80 v/v ratio.

Results: The analysis was carried out at optimized wavelengths between 220 and 280 nm. Sample preparation involved vacuum filtration through 0.45 µm membrane filters and sonication. Empower software was employed for managing the system and processing data. The UV absorption peaks were determined for Darunavir (266 nm), Ritonavir (238 nm), Tenofovir (260 nm), and Emtricitabine (280 nm). The RP-HPLC method demonstrated outstanding sensitivity and specificity, effectively differentiating all four drugs without any interference.

Conclusion: Chromatographic analysis confirmed distinct and consistent peak separation, and all system suitability parameters adhered to the ICH-Q2 (R2) analytical validation guidelines. In summary, the developed method is robust, validated, and highly efficient for the simultaneous estimation of selected antiviral drugs in both bulk and dosage forms, making it suitable for routine quality control and pharmaceutical regulatory applications.

Keywords: Darunavir, Ritonavir, Tenofovir, Emtricitabine, RP-HPLC

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CONTINUOUS GLUCOSE MONITORING SYSTEMS: CURRENT TRENDS, CLINICAL IMPACT, AND FUTURE DIRECTIONS

VINOD KUMAR K[1*], KAMAL RAJ YERRAGUNTLA[2], MARUTHI PRASAD JENNE[2], ABHILASH GADI[2], AKHILA SEPOORI[2], ANUSHA GUNDA[2].

[1*] Associate Professor, Head of Department of Pharmaceutical Analysis, Raghavendra Institute of Pharmaceutical Education and Research, Anantapur, Andhra Pradesh, India, [2] Raghavendra Institute of Pharmaceutical Education and Research, Anantapur, Andhra Pradesh, India. Email: kamal274060@gmail.com

Abstract

Objective: Diabetes mellitus is a chronic metabolic disorder characterized by elevated blood glucose levels, leading to serious microvascular and macrovascular complications if not effectively managed. According to the International Diabetes Federation (IDF), the prevalence of diabetes is rising globally, with over 536 million individuals affected in 2021 - a number expected to escalate to 783 million by 2045. The financial burden is substantial, projected to exceed USD 1 trillion by 2030. Continuous glucose monitoring (CGM) systems have revolutionized diabetes management by offering real-time insights into glucose fluctuations, enabling proactive interventions and improved glycemic control.

Methods: Traditional glucose monitoring through finger-pricking is often inconvenient and fails to capture rapid glycemic changes. In contrast, CGM systems use sensors to monitor glucose levels in the interstitial fluid, converting them into continuous readings. These systems are categorized into professional/blinded CGM, intermittently scanned CGM (isCGM), real-time CGM (rt-CGM), and integrated CGM (iCGM). Accuracy of CGM devices is evaluated through metrics like Mean Absolute Relative Difference (MARD) and error grid analysis. Recent FDA-approved CGM devices such as Dexcom G7, FreeStyle Libre 3, Eversense 365, and new OTC systems like Stelo and Lingo demonstrate improvements in sensor design, wear duration, and user experience, with MARDs ranging from 7.9% to 10.2%.

Results: Clinical studies confirm their safety, reliability, and significant HbA1c reductions. CGMs enhance patient engagement, improve mental well-being, and support lifestyle changes. Future trends include non-invasive CGM technologies utilizing optical and non-optical methods, and closed-loop artificial pancreas systems that automate insulin delivery based on CGM data. **Conclusion:** These advancements hold promise for transforming diabetes care, minimizing complications, and enhancing patient outcomes. However, further development and regulatory approvals are essential for widespread clinical application.

Keywords: Continuous Glucose Monitoring, Blood Glucose Monitoring, Diabetes, Dexcom G7, Freestyle Libre 3, Artificial Pancreas System.

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ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PERCEPTION IN POSTNATAL POPULATION ABOUT POSTPARTUM DEPRESSION: AN OBSERVATIONAL STUDY

MOHD SAMI UPPINWALE*, M S GANACHARI, AISHWARYA HIREMATH

Kle College of Pharmacy - Kaher, Belagavi. Email: sami71371@gmail.com

Abstract

Introduction: Postpartum depression (PPD) is a serious, yet treatable mood disorder affecting approximately 10–15 % of new mothers worldwide (average prevalence ~13 %). Beyond sadness and fatigue, PPD can impair maternal–infant bonding and family well‐being, yet awareness remains low in many settings.

Need For Study: Despite its high prevalence and significant consequences for both mother and child, there is a critical lack of data on how postnatal women understand, feel about, and perceive PPD—especially in our local context. Assessing their knowledge, attitudes, and perceptions (KAP) is essential to design effective, culturally appropriate educational interventions and improve early identification and support.

Objectives: To validate a self‐developed Knowledge–Attitude–Perception (KAP) questionnaire on PPD and to assess postnatal women's knowledge, attitudes, and perceptions regarding PPD.

Methods: Over six months, 208 women at 0–42 days postpartum were enrolled in a tertiary‐care hospital's Maternity & Gynaecology department. An expert‐validated, 27‐item KAP questionnaire (9 items per domain; Cronbach's $\alpha = 0.931$) was administered via Google Forms. Data were analyzed using descriptive statistics, one‐way ANOVA, and Pearson's correlation in SPSS.

Results: The findings revealed low knowledge scores (mean = 3.2 ± 1.9), generally positive attitudes (mean = 6.7 ± 1.1), and moderate perception scores (mean = 5.4 ± 1.4). Knowledge was significantly higher among women with higher education ($F = 13.386$, $p < 0.001$), employment ($F = 15.706$, $p < 0.001$), and multiple pregnancies ($F = 3.534$, $p = 0.016$). Attitude scores improved with age ($F = 10.697$, $p = 0.001$) and education ($F = 5.051$, $p = 0.002$), while perception scores were higher among older, educated, employed, and multiparous women (F values ranging from 3.729 to 11.767, all $p < 0.05$). Moderate positive correlations were observed between knowledge and perception ($r = 0.494$, $p = 0.001$) and perception and attitude ($r = 0.570$, $p = 0.001$). These findings emphasize the influence of education, age, and experience on PPD awareness and highlight the need for targeted educational interventions.

Conclusion: Significant knowledge gaps exist despite generally positive attitudes. Education, employment, age, and parity shape PPD awareness and perceptions. Targeted, culturally sensitive educational initiatives—especially for younger, less‐educated, and first‐time mothers—are critical to enhance early recognition and support.

Keywords: Postpartum depression, Knowledge–Attitude–Perception (KAP), Pregnancy

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A PROSPECTIVE STUDY ON ANEMIA IN CKD PATIENTS ON DIALYSIS VS NON-DIALYSIS

GAVINI SIVA BHARATH[1*], JAI DIVYA TELLA[1], B. PAVANI[1], SK. SEEMA[1], SK. KAREEM[1], NADENDLA RAMA RAO[1], K.R.S. SAMBA SIVA RAO[2]

[1]Department of Pharmacy Practice Chalapathi Institute of Pharmaceutical Sciences, [2]Vice chancellor Mangalayatan University - Jabalpur, Jabalpur, Madhya Pradesh. Email: bharath.gavini@gmail.com

Abstract:

Background: Anemia is a common complication in chronic kidney disease (CKD) due to reduced erythropoietin production by the kidneys, leading to decreased red blood cell and hemoglobin levels. In dialysis-dependent (DD) CKD patients, anemia tends to be more severe due to blood and iron losses during dialysis, often requiring frequent erythropoiesis-stimulating agent (ESA) therapy and intravenous (IV) iron. In contrast, non-dialysis dependent (NDD) CKD patients typically experience milder anemia and may be managed with oral iron and occasional ESA therapy as part of a broader treatment approach.

Methods: A prospective observational study was carried out for 6 months where the patients were screened based on inclusion and exclusion criteria. Patients who satisfied the inclusion criteria were included in the study after obtaining informed consent. The data was collected in the pre- designed data collection forms. Results were obtained and statistical tools were used to analyze and tabulate the data.

Results: The study included 230 participants, with a male predominance (147 males, 83 females). Most participants (30%) were aged 48–57 years and were more frequently diagnosed with chronic kidney disease (CKD), while the 18–27 age group represented the smallest proportion (2.6%). Of the total cohort, 116 patients (50.43%) had dialysis-dependent CKD (DD CKD), and 114 (49.56%) had non-dialysis dependent CKD (NDD CKD). Anemia was highly prevalent, affecting 226 patients (98.26%). Only 4 patients (1.73%) were non-anemic (Grade 0). Among those with anemia, 32 (13.91%) had Grade 1, 81 (35.21%) had Grade 2, 63 (27.39%) had Grade 3, and 50 (21.73%) had Grade 4 anemia.

Conclusion: In conclusion, this study underscores the high prevalence of anemia among individuals with chronic kidney disease (CKD), affecting 98% of the 230 participants. Grade 2 anemia was the most commonly observed severity, while more advanced anemia (Grades 3 and 4) was predominantly seen in patients with end-stage renal disease (ESRD) undergoing dialysis. The study also noted a male predominance, potentially linked to lifestyle-related factors. When compared with findings from Gunnar Toft's research, similar trends in anemia severity were observed between dialysis-dependent and non-dialysis dependent CKD groups. These results highlight the critical need for proactive anemia management, particularly in patients with advanced CKD requiring dialysis.

Keywords: Chronic renal disease, anemia, dialysis-dependent chronic kidney disease, non-dialysis dependent chronic kidney disease.

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INTEGRATING AI INTO CLINICAL PRACTICE FOR EARLY CANCER DIAGNOSIS

T. NANDINI, G. SRAVANI, D. SAI GURU, NEELIMA GANZI

Raghavendra Institute of Pharmaceutical Education and Research, Anantapur, Andhra Pradesh, India.
Email: nandininandu7264@gmail.com

Abstract

Background: Early detection of cancer is a critical factor in improving treatment outcomes and survival rates. Traditional diagnostic methods often face limitations in accuracy, speed, and accessibility. Recent advances in artificial intelligence (Al), particularly in machine learning and deep learning. have shown potential in enhancing diagnostic capabilities across various cancer types.

Objective: This study aims to evaluate the role and effectiveness of Al technologies in the early detection and diagnosis of cancer, highlighting the current applications, benefits, and challenges. and future directions in integrating Al into clinical oncology.

Methods: A comprehensive literature review was conducted by analyzing peer-reviewed articles and clinical studies focusing on Al applications in cancer diagnostics. Key areas assessed included imaging analysis, biomarker detection, data integration, and algorithm-based screening tools. The study emphasizes the comparison between Al-powered diagnostics and conventional diagnostic methods.

Results: The analysis revealed that Al significantly improves diagnostic accuracy, especially in radiology and histopathology, by detecting subtle patterns unrecognizable to the human eye. AI models such as convolutional neural networks (CNNs) have demonstrated high sensitivity and specificity in identifying cancers like breast. lung. and skin cancers. Additionally. AI tools assist in reducing human error, speeding up analysis, and enabling large-scale screening.

Conclusion: AI holds transformative potential in early cancer diagnosis by providing timely information. accurate, and cost-effective solutions. However, challenges related to data privacy. model interpretability, and clinical validation remain. Future research must focus on standardizing AI integration and ensuring ethical implementation to maximize its benefits in oncology.

Key words: Artificial intelligence, early cancer detection, machine learning. medical imaging, diagnostic accuracy, oncology, deep learning.

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FORMULATION AND EVALUATION OF LEVODOPA SOLID LIPID NANOPARTICLES FOR EFFECTIVE TREATMENT OF PARKINSONS DISEASE

G. KRANTHI KUMAR*, S. SAHISTA ANJUM, P. HARI PRIYA, M. WASEEM TAJ, T. PAVITRA, PADMA PRIYA

Department of Pharmaceutical Analysis, Raghavendra Institute of Pharmaceutical Educational and Research (RIPER) - Autonomous, Anantapur – 515721. Email: sa7934497@gmail.com

Abstract:

Background: Parkinson's disease (PD) is a progressive neurological illness that causes both motor and non-motor symptoms due to dopamine insufficiency and death of dopaminergic neurons. Although levodopa is still the gold standard for treatment, its oral administration has a short half-life, peripheral adverse effects, and low absorption, necessitating frequent dosage.

Objective: The development and assessment of levodopa-loaded solid lipid nanoparticles (SLNs) to increase brain targeting, bioavailability, and sustained drug release are the main objectives of this work.

Methods: Hot homogenization and ultrasonication were used to prepare the SLNs, and a 2^3 factorial design was used to improve the process by adjusting the lipid concentration, surfactant amount, and ultrasonication duration. The improved formulation showed great entrapment effectiveness (87.2%), a zeta potential of -29.7 mV, a PDI of 0.215, and a particle size of 152.3 nm. Drug release in vitro demonstrated good stability over a three-month period and sustained release for up to 24 hours. Studies on BBB permeability and in vitro cytotoxicity validated the product's brain-targeting capabilities and biocompatibility.

Results and Conclusion: Compared to traditional levodopa, in vivo pharmacokinetics and therapeutic investigations in PD models have shown improved efficacy and fewer adverse effects. According to these results, SLNs present a viable strategy for enhancing levodopa administration and therapeutic results in the treatment of Parkinson's disease.

Key words: Parkinson's disease, Levodopa, Solid lipid nanoparticles (SLNs), Drug delivery, Brain targeting, Bioavailability, Blood brain barrier (BBB), Nanoparticles, Neurodegenerative disorder.

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LCMS PROFILING AND NEUROPROTECTIVE EFFECT OF BIOACTIVE FRACTION OF *ROSMAINUS OFFICINALIS* AGAINST POST STROKE COMPLICATIONS IN RATS

SANTHIVARDHAN CHINNI, CHILAMAKURU NARESH BABU, KANALA SOMASEKHAR REDDY, AKKIRAJU SUDHEER*

Raghavendra Institute of Pharmaceutical education and Research (RIPER)-Autonomous, Anantapur, Andhra Pradesh.
Email: sudeerlegend@gmail.com

Abstract

Background Cognitive and motor deficits are the most common complications after the ischemic stroke.Oxidative stress and neuroinflammation have been implicated in the stroke complications. This study is aimed to evaluate the impact of *Rosmarinus officinalis* in a bilateral carotid artery occlusion induced post stroke complications. First *in vitro* anti-inflammatory and antioxidant activity of methanol and its fraction were analyzed. High potent n-hexane fraction was taken up for *in vivo* activity. Male rats pre-treated with the n-hexane fraction (250 and 500 mg/kg, p.o) for 14 days and subjected to bilateral carotid artery occlusion (30 min) and reperfusion (24 hours) to induce stroke complications.

Results: Pathological changes observed in I/R injury are decline in cognitive ability, elevated levels of malondialdehyde and myeloperoxidase and depleted antioxidant enzymes ($P<0.0001$). Motor disorders were indicated by a longer beam-walking period and a shorter duration on the hanging wire test ($P<0.01$). Microscopic examination confirmed hippocampal injury, while macroscopic examination by TTC staining demonstrated the ischemic penumbra. These effects were significantly attenuated by the n-hexane fraction in a dose-dependent manner. LC-MS analysis showed that luteolin, myricetin, protocatechuic acid, and limocitrin were the major compounds with the best docking scores on myeloperoxidase.

Conclusion The n-hexane fraction demonstrated a neuroprotective effect on post-stroke complications, likely due to the synergistic action of its known antioxidant and anti-inflammatory components.

Keywords: Ischemic stroke, Oxidative stress, Neuroinflammation, Neuroprotection, *Rosmarinus officinalis*, Antioxidant and anti-inflammatory.

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INHALATIONAL DEVICES IN ASTHMA/COPD MANAGEMENT: A DECADE-LONG CRITICAL REVIEW OF CLINICIAN PREFERENCES AND PATIENT ADHERENCE ACROSS GLOBAL AND INDIAN CONTEXTS (2015–2025)

A. UMAVATHI*, G. MALLESWARE, Z. IDA KRUPA OLIVE, U. VEERENDRA

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research, Anantapur, Andhra Pradesh, India-515721. E-Mail: umavathiadi@gmail.com

Abstract

Objective: This critical review synthesizes literature from May 2015 to April 2025 on clinician preferences and patient usage patterns of inhalational devices in asthma/COPD management, comparing global trends with India-specific challenges. Inhaler efficacy hinges on appropriate device selection and patient technique, yet errors persist globally, exacerbating poor disease control and healthcare costs.

Methods: Using Semantic Scholar-indexed studies retrieved via Google Search, this review examines clinician prescribing habits, patient adherence, and inhaler technique errors across diverse settings.

Results: Globally, DPIs and pMDIs dominate prescriptions, driven by patient ability, cost, and clinician familiarity. However, high error rates (12.5–86%) in device handling, inhalation maneuvers, and breath-holding persist across all devices. In India, DPIs and pMDIs are widely prescribed, but 52.6% of patients receive devices mismatched to their peak inspiratory flow rate (PIFR), highlighting gaps in guideline adherence. Indian studies report higher error rates (e.g., 86% incorrect usage) and unique barriers like financial constraints (28% patients) and social stigma (20%), alongside universal issues like forgetfulness. While pharmacist-led education improves technique, economic pressures and limited PIFR assessment undermine long-term adherence.

Conclusion: The review identifies critical disparities: PIFR evaluation is routine globally but neglected in India, and cost/stigma disproportionately affect Indian patients. Despite shared challenges in patient education, India's diverse literacy levels and healthcare access demand tailored interventions. Recommendations include integrating PIFR assessments in Indian clinics, subsidizing device costs, and combating stigma through awareness campaigns. Future research should prioritize comparative studies, culturally adapted adherence strategies, and scalable education models.

Keywords: inhaler devices, asthma/COPD management, clinician preferences, patient adherence, India-global comparison.

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PHARMACIST-LED PEDIATRIC ASTHMA MANAGEMENT: A SYSTEMATIC REVIEW OF COST-EFFECTIVENESS AND HEALTH OUTCOMES ACROSS ECONOMIC SETTINGS (2020–2025)

Z. IDA KRUPA OLIVE, A. UMAVATHI, G. MALLESWARE, U. VEERENDRA

Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research, Anantapur, Andhra Pradesh, India-515721. E-Mail: umavathiadi@gmail.com

Abstract

Objective: This systematic review synthesizes evidence from May 2020 to April 2025 on the clinical, economic, and humanistic outcomes of pharmacist-led pharmaceutical care interventions for pediatric asthma management globally. Pediatric asthma imposes significant health and socioeconomic burdens, necessitating innovative care models. Pharmacist interventions—encompassing education, adherence support, inhaler training, and telemedicine—have gained traction, particularly post-COVID-19.

Methods: Using PubMed, a systematic search identified studies evaluating these interventions in children under 18, focusing on clinical (e.g., asthma control, healthcare utilization), economic (cost-effectiveness, direct/indirect costs), and humanistic outcomes (quality of life, adherence). **Results:** Results from 25 studies and reviews indicate consistent improvements in clinical outcomes: enhanced asthma control scores (C-ACT/ACT), reduced emergency visits/hospitalizations, and better adherence/inhaler technique. Humanistic outcomes showed significant gains in caregiver/child quality of life, knowledge, and satisfaction. However, rigorous economic evaluations remain scarce, with limited cost-effectiveness analyses despite observed cost reductions from fewer hospitalizations. Telemedicine interventions, such as those in Jordan, demonstrated reduced parental wage loss and healthcare costs. Challenges include heterogeneous methodologies, variable study quality, and underrepresentation of low- and middle-income countries.

Conclusion: The review underscores the clinical and humanistic value of pharmacist-led care, advocating for integration into pediatric asthma pathways. However, gaps persist in economic validation and standardized outcome measures. Recommendations include prioritizing cost-effectiveness studies, expanding research in diverse settings, and adopting core outcome sets for comparability.

Keywords: pediatric asthma management, pharmaceutical care, pharmacist-led interventions, cost-effectiveness, health outcomes.

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EFFICACY, SAFETY & TOLERABILITY OF THE TENOFOVIR DISOPROXIL-LAMIVUDINE-DOLUTEGRAVIR REGIMEN IN TREATMENT OF SOUTH INDIAN ADULT PATIENTS LIVING WITH HIV-1.

PATHAN AMANULLA KHAN [1]*, MAHADEVAMMA L[2]

[1]Research scholar, Dept. of Pharmacy Practice, College of pharmaceutical Sciences, DSU, Harohalli, Bangalore, [2]Associate Prof, Dept. of Pharmacy Practice, College of pharmaceutical Sciences, School of Health Sciences, DSU, Harohalli, Bangalore
Email: aman.pathan811@gmail.com

Abstract:

Background: HIV is a retrovirus that selectively targets CD4+ T cells and HIV infection is prevalent on a global scale. The treatment involves Highly Active Antiretroviral Therapy, or HAART. The appropriate use of HAART significantly reduces HIV replication. TLD is one such HAART regimen that contains Dolutegravir (DTG) as a preferred first-line treatment for HIV, comprising two NRTIs (TDF 300 mg, 3TC 300 mg) and one INSTI (DTG 50 mg) in a fixed- dose combination. This regimen effectively suppresses plasma HIV RNA load to undetectable levels, restores CD4+ cell counts, and offers improved tolerability and drug-resistance barriers compared to older Integrase inhibitors & NRTIs.

Objectives: objectives were comparing immunologic response (CD4 cell count change), virologic response (viral load reduction), Medication adherence, and incidence of common ADRs and OIs of HIV-1 patients to demonstrate the long-term safety and tolerability of the TLD regimen.

Methods: The present Ambispective study compared the efficacy, safety, and tolerability of the TLD regimen in 1021 patients (19-75 years) living with HIV-1. Data was collected prospectively through follow-up visits and retrospectively through medical records.

Results: of the 930 treatment-experienced PLWH, 51.18% were males, 46.67% were females while 2.15% were transgender & of the 91 treatment-naive PLWH 52.75% were males, 45.05% were females while 2.2% were transgender. The study demonstrated good CD4 count elevation at 6, 12 months of TLD regimen initiation while the viral load had marked suppression to <1000 c/ml after 36 to 48 months of treatment.

Conclusion: Study makes a significant contribution to the optimization of HIV treatment outcomes, enhancing patient quality of life, and advancing progress towards achieving the desired goals for HIV control.

Key words: Safety, Efficacy, tolerability, CD4 count, viral load.

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THE IMPACT AND CLINICAL OUTCOMES OF RENAL DOSE DOPAMINE IN POST CARDIAC SURGICAL PATIENTS IN THE CARDIO -THORACIC POST-OPERATIVE CARE UNIT

AYESHA SIDDIQUA*, SUMAIYA SALEEM MOHAMMED AND PATHAN AMANULLA KHAN

Anwarul Uloom College of Pharmacy, New Mallepally, Hyderabad – 500001, Telangana, India.Email: ayeshasiddiqua443@gmail.com

Abstract:

Background: Dopamine is a type of naturally occurring catecholamine that functions as the direct metabolic precursor to noradrenaline. It exerts its effects on dopaminergic receptors, namely the splanchnic, coronary, and renal vasculature; dopaminergic type 1 and type 2. Low doses of dopamine—typically, less than 3 mcg/kg/minute—are referred to as renal dose dopamine. The term "renal" indicates the drug's impact on the kidneys. In the majority of instances, patients who undergo cardiovascular procedures have an increased likelihood for developing acute kidney injury. Therefore, the renal dosage of dopamine is widely used in varied patients to demonstrate renal safeguarding and maintain hemodynamic status.

Objective and Methods: This is a prospective cohort study carried out on 72 patients aimed to determine and evaluate the Reno protective role of renal dose of dopamine in postoperative cardiac patients. The primary objective of this research study is to determine the appropriate dosage of dopamine as a therapeutic agent for stabilizing the haemodynamic condition and enhancing renal function after surgery. The secondary objective is to assess the efficiency of dopamine upon the haemodynamic status and investigate the effect of postoperative use of low-dose dopamine in patients post cardiac surgery on improvement in renal function. The Karl's Pearson correlation and the students paired t test were used for statistical analysis indicating the presence of positive relationship.

Result and Conclusion: The study revealed that the renal parameters exhibited statistical significance with a p-value of 0.026, indicating that the renal function of the individuals was appropriate. Therefore, it can be inferred that dopamine has exhibited reno-protective properties as a therapeutic agent.

Keywords: Dopamine (DA), Acute renal failure, Renal blood flow, Serum creatinine, Cardiac output

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METHOTREXATE INDUCED MYELOSUPPRESSION: A RARE CASE REPORT

KAILASH BHOVI

RME'S College of Pharmacy, Kalaburgi. Email: kailashbhovi92@gmail.com

Abstract

Objective: Methotrexate (MTX) is an antimetabolite widely used drug most commonly used in the treatment of various malignancies and low doses autoimmune disorders like rheumatoid arthritis. Although generally well-tolerated at low doses, serious adverse effects such as myelosuppression can rarely occur. Bone marrow suppression is a common adverse reaction of methotrexate that is rarely associated with life-threatening bone marrow suppression. MTX-related myelosuppression is estimated to occur in 2 to 10.2% of patients with inflammatory rheumatic diseases. Neutropenia is encountered most often, but anaemia and thrombocytopenia also occur. Neutropenia and pancytopenia developed in 1.4 to 7% and 0.3 to 2.1% of patients receiving low-doses of MTX, respectively.

Methods and Result: Here, a patient was admitted to the HDU ward with complaints of B/L lower limb pain with ulcers in the last 15 days with h/o fever for 2 days and breathlessness since morning. In this case, the patients had prescribed tab methotrexate for long term without the diagnosis of a particular disease.

Keywords: Methotrexate, myelosupression, neutropenia, malignancy

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EOSINOPENIA AS AN EARLY INDICATOR OF INFECTION AMONG OLDER ADULTS: AN AMBISPECTIVE OBSERVATIONAL STUDY FROM A TERTIARY CARE CENTER IN SOUTH INDIA

N. PARVATHY[1], SACHIN G NAIR[1], VISHNU RAJAN NAIR[1], DR. ARUN DAVID [2], DR. AKHIL ARUN [3]

[1]PharmD Intern, Amrita School of Pharmacy, Amrita Vishwa Vidyapeetham, AIMS Health Sciences Campus, AIMS, Ponekkara P.O, Kochi-682041, Kerala, India, [2]Assistant Professor, Department of Geriatrics, Amrita institute of Medical Sciences, Amrita Vishwa Vidyapeetham, Ponekkara, Kochi Kerala-68204, [3]Lecturer, Amrita School of Pharmacy, Amrita Vishwa Vidyapeetham, AIMS Health Sciences Campus, AIMS Ponekkara P.O., Kochi, Kerala 682041.Email: parvathy1728@gmail.com

Abstract

Background: The current tools used for detection of infections include procalcitonin, culture growth test, CRP and CBC, of which eosinophil counts are affordable and regularly available.

Objective: To evaluate the cost effectiveness of eosinophils as a diagnostic tool in comparison to established instruments such as CRP and Procalcitonin.

Methodology: This ambispective observational cohort study was conducted in a single Centre. The data was collected for a period of 6 months which included demographic details, Eosinophil count, WBC, Neutrophils, Lymphocytes, Neutrophil- Lymphocyte ratio, Absolute Eosinophil count.

Results: The Absolute Eosinophil Count in the group with bacterial growth exhibited a larger mean (4.44) compared to the no-growth group (0.56), with a p-value of 0.011. Sensitivity analysis reveals that AEC+CRP is more cost-effective under budget constraints. In terms of cost, procalcitonin is the better option if it stays below 1600□. The ICER study shows that procalcitonin costs 500□ for every day a patient stays in the intensive care unit (ICU). If hospitals can pay for an earlier discharge, it is a cost-effective treatment.

Conclusion: AEC is a promising biomarker for infection, in financially difficult environments as it can help clinicians make therapeutic decisions without further economic strain for the patient.

Keywords: Infections, Eosinophils, Incremental Cost-Effectiveness Ratio (ICER)

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COMPARATIVE EFFICACY AND COST-EFFECTIVENESS OF BUDESONIDE VERSUS MOMETASONE IN ALLERGIC RHINITIS: THE BETTER -STUDY

DR. AKHIL ARUN[1]*, M SWETHA LAKSHMI[1], CHANDRE GOWDA B V[2], BEULAH MILTON[3]

[1*]Lecturer, Department of Pharmacy Practice Amrita School of Pharmacy, Amrita Vishwa Vidyapeetham, AIMS Health Sciences Campus, AIMS Ponekkara P.O., Kochi, Kerala 682041, [1]Assistant Professor, Professor & HOD, Department of ENT, MVJ Medical College and Research Hospital NH75, 30th Mile, Dandupalya Village Kolathur, post, Hoskote, Karnataka 562114, [2]Professor & HOD, Department of ENT, MVJ Medical College and Research Hospital NH75, 30th Mile, Dandupalya Village Kolathur, post, Hoskote, Karnataka 562114, [3]Professor & HOD, Department of Pharmacy Practice,Kruapnidhi College of Pharmacy, 12/1, Chikka Bellandur, Carmelaram Gunjur Road Varthur Hobli, Off Sarjapur Rd, Bengaluru, Karnataka 560035.

Email: akhilarun1997@gmail.com

Abstract

Background: Allergic Rhinitis (AR) is a highly prevalent IgE-mediated condition affecting quality of life and productivity. Intranasal corticosteroids (INCS) remain the choice of therapy for moderate-to-severe AR. This study evaluates the comparative efficacy, safety, and cost-effectiveness of Budesonide and Mometasone furoate nasal sprays.

Objective: To determine which nasal spray offers better symptom control, quicker onset of action, and greater cost-effectiveness in patients with allergic rhinitis.

Methods: A prospective, open-label, randomized study involving 100 AR patients was conducted at MVJ Medical College, Bangalore. Patients were randomised into two groups using web-based sequences: Group A Received Budesonide (256 µg BD) and Group B received Mometasone (200 µg BD) for six weeks. Efficacy was evaluated using the Total Nasal Symptom Score (TNSS) at 2, 4, and 6 weeks. Cost-effectiveness was assessed using the R.4.4.2 version.

Results: Both groups showed significant symptom reduction ($p<0.001$), but Budesonide led to faster relief (Mean onset: 5.08 weeks vs. 8.60 weeks, $p<0.001$) and greater TNSS reduction (4.50 vs. 3.08). Budesonide was also more cost-effective, with a cost per unit symptom improvement of INR 134 vs. INR 196.75 for Mometasone. Adverse events were minimal and comparable between groups.

Conclusion: While both INCS options are effective and well-tolerated, Budesonide offers quicker symptom relief and superior cost-effectiveness. It can be recommended as a preferred option, especially in settings where affordability and rapid response are critical.

Keywords: Allergic rhinitis, Budesonide, Mometasone furoate, Cost-effectiveness, Intranasal corticosteroids.

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PHARMACOLOGICAL POTENTIALS OF *MORUS ALBA*: A COMPREHENSIVE OVERVIEW

KIRAN N[1], N V L SIRISHA MULUKURI[1,] M SAKTHI GANAPATHI[2]

[1]Department of Pharmacognosy, Nitte College of Pharmaceutical Sciences (A constituent unit of Nitte Education Trust), Bengaluru-560064, India, [2]Department of Pharmacognosy, School of Pharmacy, Sri Balaji Vidyapeeth (Deemed to be university) Puducherry. Email: kiran.n@nitte.edu.in

Abstract:

Objective: *Morus alba*, commonly known as mulberry, is a plant with significant medicinal and nutritional properties, particularly its leaves, which are used in various traditional and modern applications. *Morus alba* leaves are rich in various chemical constituents such as flavanols, anthocyanins, alkaloids, flavonoids (luteolin and apigenin) and phenolic acids (caffeic, chlorogenic, and p-coumaric acids). Leaves of mulberry plant exhibits several pharmacological properties such as anti-inflammatory, antidiabetic, immunomodulatory, antihyperglycemic, antihyperlipidemic, antimicrobial, antiatherogenic, cardiovascular, cardioprotective, anticancer and antioxidant activities. Moreover, the leaves are used as a natural agent in the management of obesity treatment.

Results and Conclusion: Even though *in-vitro* results are encouraging but clinical evidence is lacking. Further research is needed to explore its safety profiles and clinical efficacy. This review supports the continued investigation of *Morus alba* leaves in Chronic disease management.

Keywords:*Morus alba*, flavonoids, phenolic acids, anti-obesity, chronic disease management.

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PHARMACOKINETIC EVALUATION OF PAROXETINE ENANTIOMERS BY CHIRAL CHROMATOGRAPHY: INSIGHTS INTO ENANTIOMERIC INTERCONVERSION

N. LAVANYA[1,2], NIMBAGAL RAGHAVENDRA NAVEEN[3], RASHMI N.G[4*]

[1]Ph.DResearch Scholar,Department of Pharmaceutical Analysis, Sri Adichunchanagiri College of Pharmacy, Adichunchanagiri University, B.G.Nagara-571448, Karnataka, India, [2]Department of Pharmaceutical Analysis and Chemistry, TVM College of Pharmacy, Bellary, 583104 Karnataka, India. [3]Department of Pharmaceutics, Sri Adichunchanagiri College of Pharmacy, Adichunchanagiri University, B.G.Nagara-571448, Karnataka, India, [4]Department of Pharmaceutical Analysis and Chemistry, Sri Adichunchanagiri College of Pharmacy, Adichunchanagiri University, B.G.Nagara-571448, Karnataka, India. Email: lavanyanandula24@gmail.com

Abstract:

Objective: Paroxetine, an S-enantiomer chiral selective serotonin reuptake inhibitor (SSRI), exerts pharmacological activity specific to enantiomers, with S-enantiomer being the major contributor to therapeutic effects. This study focused on the development and validation of a chiral Ultra-Fast Liquid Chromatography (UFLC) method for the enantioselective measurement of Paroxetine enantiomers in plasma as per USFDA bioanalytical guidelines.

Methods: The method was optimized at a flow rate of 0.8 mL/min using a Lux-i-Amylose-3 chiral column with mobile phase acetonitrile and acetate buffer (70:30 v/v) to achieve baseline separation of the enantiomers. The validated method had an expected specificity, linearity (2-10 µg/mL), precision (%CV < 15%), and accuracy (%RE within ±15%). Pharmacokinetic studies of racemic and enantiomeric forms were performed in Wistar albino rats.

Results: The study has shown that the drug is well absorbed across the blood brain barrier and found conversion of a significant amount of the R-enantiomer into the pharmacologically active S enantiomer, wherein the R enantiomer has a longer half-life of 4.96 h than the racemic mixture of 3.41 h. The AUC of R-enantiomer (1636.62 µgh/mL) was found to be higher than S-enantiomer (1417.79 µg·h/mL) and racemic mixture (1311.73 µg·h/mL), suggesting better retention in systemic circulation. This emphasizes enantioselective pharmacokinetic analysis to optimize formulations and dosing strategies.

Conclusion: Thus, this study throws light on the stereoselective metabolism of Paroxetine, advocating the use of enantioselective analytical techniques for drug development and regulatory assessment.

Keywords: Chiral chromatography, Enantiomers, Paroxetine, Half-life

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PHENYTOIN INDUCED TOXIC EPIDERMAL NECROLYSIS AND CEREBELLAR ATROPHY: A RARE CASE REPORT

S. DEEPTHI, LAXMI MALIPATIL

RME'S College of Pharmacy, Kalaburgi. Email: deepthigowdsonti@gmail.com

Abstract

Background: Phenytoin is an antiepileptic drug widely used for controlling generalized and partial seizures due to its stabilizing influence on the neuronal membrane without causing generalized depression of the central nervous system. The pk variability and NRI of phenytoin often lead to toxicity. The usage of higher doses of phenytoin for longer duration is associated with cerebellar and vestibular toxicity. Other potential toxic effects of phenytoin include cardiac arrhythmias, gingival hyperplasia, hepatotoxicity and hypersensitivity reactions. TEN is a rare life-threatening dermatological disorder that is usually induced by a reaction to medications. TEN Involves 30% of BSA of epidermal detachment. Incidence of SJS and TEN is 0.05-2 persons per million, population per year. The long-term use of phenytoin at therapeutic and toxic levels can cause cerebellar changes including atrophy.

Objective: Here is a 42-year-old male patient admitted in MICU with complaints of altered sensorium, loss of consciousness, c/o pedal edema, petechial patches over abdomen, skin discoloration, skin pigmentation, skin Peeling over lower limbs. In this case, the patient is on long-term use of phenytoin 200 mg for CVT with seizure disorder for 6 years.

Results and Conclusion: Causality analysis of this adverse drug reaction (ADR) showed a probable association on both world health organization (WHO) - Uppsala monitoring centre (UMC) scale and Naranjo's probability scale and severity score of 7 on Hartwig's severity assessment scale.

Keywords: TEN - Toxic epidermal necrolysis, PK - Pharmacokinetic, NRI - Narrow therapeutic index, BSA - body surface area, CVT-Cerebral venous thrombosis, MICU - Medicine intensive care unit.

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THE RISK OF DEVELOPMENT OF PRE-ECLAMSIA AFTER FIRST TRIMISTER SCREENING AND ASPIRIN PROPHYLAXIS

VISHNU LAHARI, JYOTHI SUCHITHRA

Rural development Trust hospital, Bathalapalli, Anantapur, Andhra Pradesh.Email: chaithanya3796@gmail.com

Abstract

Background: Pre-eclampsia (PE) remains a significant contributor to maternal and perinatal morbidity and mortality worldwide. First-trimester screening offers an opportunity for early prediction and intervention.

Objective: This study aims to assess the effectiveness of aspirin prophylaxis in preventing PE and evaluate the role of first-trimester screening tools in a tertiary care setting.

Methods: The study included 169 pregnant women with singleton pregnancies. First-trimester screening was conducted between 11–13+6 weeks, utilizing maternal risk factors, mean arterial pressure (MAP), and uterine artery Doppler (UtA-PI).

Results: The incidence of early-onset PE was 1.2%, and late-onset PE was 8.3%. First-trimester screening parameters showed mean values of 104.46 ± 8.67 for MAP and 2.7 ± 0.6 for UtA-PI. Despite aspirin prophylaxis, early-onset PE was associated with increased risks of placental abruption, HELLP syndrome, and stillbirth. Late-onset PE was significantly associated with fetal growth restriction, preterm birth, and NICU admission.

Conclusion: First-trimester screening effectively identifies women at risk for PE. Aspirin prophylaxis may reduce the incidence of early-onset PE, but its effectiveness is limited for late-onset PE. Both early and late-onset PE are associated with significant maternal and fetal complications.

Keywords: Pre-eclampsia, Aspirin, First-trimester screening, Mean arterial pressure, uterine artery doppler, Prevention.

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REAL-WORLD EVIDENCE ON CRAVINGS CONTROL IN ALCOHOL DEPENDENCE WITH ANTI-CRAVING THERAPY

MADIHA SULTANA*[1], TUSHAR VERMA [1], ANJU JOSE [1], GOPAL DAS C.M [2], NEERAJ RAJ B [2]

[1]Department of Pharmacy Practice, College of Pharmaceutical Sciences, Dayananda Sagar University, Ramanagara, Karnataka, India, [2]Department of Psychiatry, Dr. Chandramma Dayananda Sagar Institute of Medical Education and Research, Ramanagara, Karnataka, India. Email: madihasultana778@gmail.com

Abstract

Background: Alcohol use disorder is a prevalent condition characterized by difficulty in controlling alcohol consumption, leading to significant global health impacts. Despite the effectiveness of anti-craving medications such as naltrexone, acamprosate, baclofen, ondansetron, and topiramate in reducing cravings and relapses, these medications are underutilized by healthcare providers.

Objectives: To assess cravings among individuals with alcohol use disorder who has been prescribed with anticraving medication.

Methods: A 6 months Prospective observational study was conducted at Department of Psychiatry CDSIMER to assess the changes in the cravings among the ADS patients who were being prescribed with different anticraving medications. The study enrolled 61 participants who met eligibility criteria.

Results: The study involved ADS patients on anti-craving drugs, with 65.6% aged 30-50, 96.7% males, 88.5% rural residents, and 73.8% with severe alcohol dependence. Baclofen was prescribed to 90.2% of participants. There was a significant correlation between SADQC and PACS scores ($r = 0.304$, $p = 0.017$). MARS scores significantly predicted PACS scores ($R = 0.757$, $R^2 = 0.573$, $p < 0.001$). 67.2% aimed to reduce alcohol use, with over 80% achieving abstinence. Relapse rates increased later in the study. Adherence to anti-craving medications significantly reduced cravings and facilitated abstinence.

Conclusion: The study observed a statistically significant decrease in cravings among individuals prescribed with anticraving drugs. However, there was no statistically significant correlation found between the dosage of Baclofen and PACS scores.

Keywords: Alcohol dependence syndrome, Cravings, Anticraving medication, Baclofen, Naltrexone.

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THE ASSOCIATION BETWEEN SLEEP QUALITY, MEDICATION ADHERENCE, AND DAYTIME SOMNOLENCE IN PSYCHIATRY PATIENTS: THE IMPACT OF PSYCHOTROPIC MEDICATIONS

PRIYANKA KUMARI R, MONIMALA BHOWMIK, BHAVANA S, MAHADEVAMMA L*

Dayananda Sagar University, COPS. Email: priyanka20002012@gmail.com

Abstract:

Background: Sleep quality plays a crucial role in mental and social health, especially in individuals with psychiatric disorders, who frequently deal with sleep disturbances related to their disorder. Sleep disturbances can significantly impact the medication adherence and overall treatment efficacy. Inadequate sleep is commonly linked with different psychiatric conditions, and psychotropic medications can either enhance or worsen sleep parameters and daytime somnolence.

Objective: This study explores the relationship between sleep quality, medication adherence and effects of psychotropic drugs in individuals with psychiatric conditions.

Methods: A prospective cohort study was conducted at the Psychiatry department of CDSIMER Hospital, Karnataka, India, involving 91 individuals diagnosed with psychiatric disorders. Sleep quality was assessed using the Pittsburg Sleep Quality Index (PSQI), compliance was measured through Medication Adherence Rating Scale (MARS-10) and Epworth Sleepiness Scale (ESS) was used to assess daytime somnolence. Assessments were conducted at baseline, the second- and fourth-weeks post-medication and correlation analysis was performed.

Results: Initially poor sleep quality demonstrated significant improvement with treatment, and adherence to medication also increased, revealing a negative correlation with inadequate sleep. Daytime somnolence showed a slight rise, affected by the sedative properties of psychotropic drugs. Baclofen had the most beneficial effect on sleep quality, while Endoxifen led to ongoing sleep disturbances. Fluoxetine was associated with highest levels of daytime drowsiness, unlike Baclofen.

Conclusion: These findings emphasize the necessity of tailored psychotropic treatment approaches to improve sleep quality, reduce daytime somnolence, and enhance overall treatment efficacy.

Keywords: sleep disturbances, psychotropic drugs, sedative effects, baclofen, endoxifen, fluoxetine

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BRIDGING FOLK MEDICINE AND PHARMACOKINETICS: A DIFFERENTIAL APPROACH TO HERBAL INHALATION THERAPY AND ITS QUANTITATIVE ANANLYSIS

OMKARAM SAI JYOTHI[1], AMRUTHA LAKSHMI[2], SANDHYA RANI[3]

[1]**Research Scholar, Department of Botany, Government Degree College, Ananthapuramu, Andhra Pradesh (S), India– 515001,**
[2]**Lecturer in Botany, Department of Botany, Government Degree College, Ananthapuramu, Andhra Pradesh (S), India – 515001,**
[3]**Associate Professor, Department of Botany, Sri Krishnadevaraya University, Ananthapuramu. Email:** raghuratnakaram@gmail.com

Abstract:

Objective: Herbal inhalation therapy has been a key component of traditional medicine for relieving respiratory issues like cough, cold, headache and body pains. This research connects traditional healing methods with contemporary pharmacokinetics by creating a Mathematical compartment model to examine the absorption, distribution and excretion of bioactive compounds from *Vitex negundo*, *Eucalyptus spp.*,*Leucas aspera* and *Cymbopogon citratus*.

Methods: The process of drug transport is represented by a multi compartment system of differential equations, including the Nasal Cavity, Trachea, Bronchi, Lungs and systemic circulation. The research includes several Pharmacokinetic scenarios, such as repeated dosing, continuous infusion and Truncated infusion models to mimic actual inhalation patterns. Phytochemical examination shows that monoterpenes and sesquiterpenes such as 1,8-cinole, β-caryophyllene and sabinene are the main active components responsible for therapeutic benefits. These unstable substances exhibit quick absorption in the lungs, rendering them useful for immediate alleviation of symptoms. By utilizing matrix exponential solutions, one can determine the dynamic concentration distributions of these substances throughout various comportments. Findings show that administering drugs more frequently maintains stable pulmonary levels, while longer gaps lead to some clearance before the next dose.

Results and Conclusion: This research presents a quantitative method of enhancing herbal inhalation treatment delivering insights on dosage formulation, systemic buildup, and applications in personalized medicine. The combination of differential equations and pharmacokinetics offers a new approach to enhance folk medicine with scientific precision. Upcoming tasks involve modelling heat transfer for vaporization dynamics that depend on temperature, alongside clinical validation of the suggested theoretical framework.

Key Words: Folk Medicine, Vitex negundo, Eucalyptus spp., *Leucas aspera*, monoterpenes.

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TRIAL ON SGLT2 INHIBITOR EMPAGLIFLOZIN IN MANAGEMENT OF HEART FAILURE IRRESPECTIVE OF DIABETES MELLITUS: A PILOT STUDY

ROBIN GEORGE[1*], YATHISH[2].

[1]Assistant Professor/Research Scholar, Department of Pharmacy Practice, Sri Adichunchanagiri College of Pharmacy Adichunchanagiri University, Karnataka, India, [2]Consultant Interventional Cardiologist, Adichunchanagiri Hospital and Research Centre. Email: robin.george793@gmail.com

Abstract

Background: Despite the regular use of the current convention's standard of care for treatment of HFrEF such as above-mentioned medical therapy or device therapy, the mortality and morbidity remain high in HF patients. SGLT2i has now been studied in several large placebo-controlled cardiovascular (CV) outcomes trials in patients with type 2 diabetes mellitus (T2DM). These trials were done in part to satisfy regulatory requirements to demonstrate CV safety and proven this drug class appears to moderately reduce the risk of major adverse cardiovascular events especially on patients with established atherosclerotic CV disease with or without diabetes mellitus. It also reduces blood pressure, arterial stiffness and measures of the myocardial workload, likely through various mechanisms, as well as improving other CV risk factors.

Objective: To perform a comparative assessment of Cardiovascular Benefits of Empagliflozin over the conventional therapy for Heart Failure.

Methods: Prospective Randomised Interventional follow-up study.

Results: The magnitude of effect of sodium-glucose co-transporter-2 inhibitors (SGLT2i) on specific cardiovascular disorders were assessed and estimated. Here it presents the positive cardiac outcome on various cardiac parameters in our pilot study on congestive cardiac failure patients taking empagliflozin irrespective of the diabetes status.

Conclusion: Compared with conventional treatment, empagliflozin significantly reduces worsening of heart failure and also shown significant improvement on the various cardiac parameters

Keywords: Empagliflozin, Cardiac Failure, Diabetes, Management

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PHYTOCHEMICAL CONSTITUENTS OF *ANDROGRAPHIS SAXATILIS (*ACANTHACEAAE*)*

P. POOJITHA[1] AND DR. S. SANDHYA RANI[2]

[1]Research Scholar, Department of Botany, Sri Krishnadevaraya University, Ananthapuramu, Andhra Pradesh, India-515003.
[2]Assistant Professor, Department of Botany, Sri Krishnadevaraya University, Ananthapuramu, Andhra Pradesh, India-515003.
Email: poojithapulambanku@gmail.com

Abstract

Background: *Andrographis saxatilis* Wall ex Nees, a member of the Acanthaceae family, is part of the Andrographis genus, which includes 10 species. Known commonly as the "King of Bitters," this genus has a long history of use in folk medicine due to its potential therapeutic properties. *A. saxatilis*, an endemic species, typically grows in rocky crevices of exposed terrain in scrub jungles. Phytochemicals, the bioactive compounds found in plants, are integral to their pharmacological activities. They are known to exhibit a range of bioactive properties, including antioxidant, anti-inflammatory, and antimicrobial effects, all of which contribute to disease prevention and treatment.

Objective: The current study aims to conduct a preliminary phytochemical screening to identify the major bioactive constituents in *A. saxatilis*.

Methods: The leaves of the plant were subjected to solvent extraction using petroleum ether, acetone, and methanol. These extracts were then tested qualitatively for various phytochemicals. **Results and Conclusion:** The results revealed the presence of a wide array of phytochemicals, including phenolic compounds, flavonoids, alkaloids, terpenoids, saponins, and tannins. The findings of this study contribute to a deeper understanding of the phytochemical profile of A. saxatilis and its potential pharmacological applications, highlighting its therapeutic benefits.

Keywords: Andrographis, folk medicine, phytochemicals, bioactive constituents

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DYNAMICS OF QUALITY OF LIFE IN PATIENTS DIAGNOSED WITH HEART FAILURE

.

SHADGUNYA SRESHTA P*, AASHI RAJPUT, G R SARASWATHY, VARSHA RAKSHITHA

Faculty of Pharmacy, MS Ramaiah University of Applied Sciences, University House, New BEL Road, MSR Nagar, Mathikere, Bengaluru, Karnataka 560054, India. Email: shadgunyasreshta@gmail.com

Abstract

Background: Heart failure (HF) is a clinical syndrome characterized by the heart's inability to eject adequate blood to sustain the body's metabolic requirements. Symptoms include shortness of breath, fatigue, edema, and intolerance to exercise. Such symptoms and complications adversely affect patients' quality of life (QoL). The Kansas City Cardiomyopathy Questionnaire-12 (KCCQ-12) is a standardized instrument employed to evaluate the physical, emotional, and social limitations imposed on HF patients. It offers a view of disease impact and treatment efficacy. Assessing QoL with the KCCQ-12 enables clinicians to individualize therapy and track improvement, and thus it is part of holistic HF management.

Objective: To assess the changes in QoL over time in heart failure patients using the KCCQ-12 questionnaire.

Method: This was a prospective observational study carried out over 3 months**.** Time trends in changes in scores in KCCQ-12 were examined to ascertain trends in quality of life using an interview in which quality of life information was collected at baseline, 1 month and 3 months.

Result: The findings from the KCCQ-12 Questionnaire administered to 50 patients with different types of HF and treated according to American Heart Association 2022 guidelines indicate a gradual but consistent improvement in QoL among HF patients following medical intervention. Starting from a baseline score of 37.05, there was a 5% increase to 42.34 after one month, followed by an additional 4% rise to 46.35 after three months.

Conclusion: It is observed that the steady improvement in QoL scores among HF patients in this study highlights the beneficial effects of current pharmacological treatments. Incorporating lifestyle interventions alongside these therapies could potentially enhance these outcomes even further.

Keywords: Heart Failure, KCCQ-12, Quality of Life

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A QUANTITATIVE ASSESSMENT OF COMPLIANCE WITH AMERICAN HEART ASSOCIATION GUIDELINES IN THE TREATMENT OF PATIENTS WITH HEART FAILURE

AASHI RAJPUT*, SHADGUNYA SRESHTA P, G R SARASWATHY, VARSHA RAKSHITHA

Faculty of Pharmacy, MS Ramaiah University of Applied Sciences, University House, New BEL Road, MSR Nagar, Mathikere, Bengaluru, Karnataka 560054, India. Email: rajputaashi19@gmail.com

Abstract

Background: Heart Failure (HF) is one of the most common worldwide diseases, with an estimated prevalence of 26 million patients. It is a syndrome whereby the heart cannot pump blood sufficiently due to systolic or diastolic dysfunction; it reduces blood flow, ultimately leading to a myriad of symptoms. Treatment of HF in India generally follows global recommendations, such as those of the American Heart Association (AHA) and the European Society of Cardiology (ESC). Shared therapies are ACE inhibitors/ARBs, beta-blockers, MRAs, and diuretics.

Objective: To evaluate the adherence to AHA guidelines in the pharmacological management of patients with HF.

Method: This was an observational prospective study, wherein the medication charts were thoroughly reviewed to look at the patterns of prescribing among patients with HF. This study sought to evaluate compliance with the AHA guidelines for pharmacological treatment of HF.

Results: Among 65 patients with HF, diuretics were administered to 80% of patients, followed by anticoagulants (66.15%) and beta blockers (64.62%), showing good compliance with these therapies as per AHA guidelines. SGLT2 inhibitors and mineralocorticoid receptor antagonists were administered to 38.46% and 30.77% of patients, respectively, showing moderate compliance with AHA guidelines. Yet, the prescription of angiotensin receptor-neprilysin inhibitors was quite low at 24.62%, and other significant agents like ACE inhibitors (1.54%), ARBs (7.69%), ivabradine (1.54%), and inotropic agents (1.54%) were prescribed to a limited extent. Calcium channel blockers (13.85%) and isosorbide dinitrates (4.62%) were prescribed to a minimal extent. Overall, although there is good compliance with some AHA-recommended therapy such as beta blockers and diuretics, underuse of ARNI, SGLT2 inhibitors, and other guideline-recommended therapy indicates a necessity for better compliance to improve HF treatment.

Conclusion: Most of the patients with HF had received important therapies such as diuretics, anticoagulants, and beta blockers, although a few guideline-recommended therapies such as ARNI, SGLT2 inhibitors, and ACE inhibitors are less often prescribed, their use is increasingly being integrated into present clinical practice. The growth indicates growing awareness and implementation of updated AHA guidelines among healthcare professionals, which will be the harbinger of better HF management in the future.

Keywords: Prescribing patterns, Heart Failure, Guidelines

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AWARENESS OF SYPHILIS AND HOME-BASED SYPHILIS TESTING KITS AMONG ADULTS: A CROSS-SECTIONAL STUDY

SANNIDHI PRABHU*, CRISPIN DONA J, RIYA SINGHAL, SHREYAS NC, PRAMOD KUMAR A

Faculty of Pharmacy, M.S. Ramaiah University of Applied Sciences, New BEL Road, MSR Nagar, Mathikere, Bengaluru, Karnataka 560054, India. Email: sannidhiprabhu23@gmail.com

Abstract:

Background: Sexually transmitted infections (STIs), including syphilis, impose significant health and economic burdens, especially in developing countries like India. Syphilis cases rose by 13.3% from 2017-2018, with 11 million new cases annually. Education and prevention is crucial in reducing prevalence of syphilis and improving public health outcomes. Home-based syphilis testing kits offer a convenient, private, and accessible method for individuals to screen for syphilis. By facilitating early detection and treatment, self-testing can play a critical role in reducing the transmission of syphilis.

Objective: To assess the awareness about syphilis and Home-Based Syphilis Self-testing kits among the adult population.

Methods: A cross-sectional study was carried out to assess awareness regarding syphilis and home-based syphilis testing kits using a pre-validated questionnaire and the data was statistically analysed to identify gaps and barriers for safe practices among the adult population.

Results: A total of 500 adults participated in the study. Two-third of the population were females. The mean age of the participants was 23 years. Majority had good knowledge about syphilis (93%), causative organism (84%), modes of transmission (82%), and symptoms (84%), while there was poor awareness about diagnosis (74%) and existing home-based Syphilis testing kits (38%). About two fifth of the population were aware about the home-based syphilis Self-testing kits while only 9.5% of the adult population used it. Utilization of Self testing kits was significantly higher among the younger adults (aged 18-30).

Conclusion: The study highlights good knowledge regarding syphilis, which promotes the adoption of appropriate sexual practices for its prevention. Reducing the prevalence of syphilis contributes to broader public health goals. The results highlight a moderate level of awareness but low utilization of home-based syphilis self-testing kits among adults.

Keywords: Syphilis, Knowledge, Awareness, Home-based Syphilis Self-testing kits

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DETERMINING STRENGHTS AND LIMITATIONS OF VARIOUS MORTALITY AND SEVERITY SCALES THROUGH A RETROSPECTIVE STUDY

RIYA SINGHAL*, SANNIDHI PRABHU, CRISPIN DONA J, SHREYAS NC, ADUSUMILLI PRAMOD KUMAR

Faculty of Pharmacy, MS Ramaiah Universiy of Applied Sciences, University House, New BEL Road, MSR Nagar, Mathikere, Bengaluru, Karnataka 560054, India Email: riya.singhal0005@gmail.com

Abstract

Background: In critical care while dealing with poisoning cases some key tools are there for assessing illness severity and predicting outcomes in critical care and toxicology. Their effectiveness varies by patient population and setting, making it essential to understand their strengths and limitations. Evaluating these systems supports accurate risk assessment, better resource use, and improved clinical decision-making.

Objective: To determine strengths and limitations of various mortality and severity scales such as APACHE IV, MSOFA, SAPS III, PSS.

Methods: This retrospective study analysed 100 poisoning cases recorded between 2020 and 2024, applying each scoring system to evaluate the severity and mortality outcomes of the cases.

Results: In this study, 100 poisoning cases were evaluated using APACHE IV, MSOFA, SAPS III, and PSS. The most common poisoning was OPC (38%), followed by corrosives (18%), drug overdose (15%), rodenticide (9%), miscellaneous (10%), insecticide (5%), snakebite (4%), and herbicide (1%). Each scale revealed strengths and limitations: APACHE IV excludes pediatric cases; SAPS III require early physiological data, though a longer 24 hours, window may be ideal; PSS omits psychiatric/comorbid factors; and pseudocholinesterase levels were often missing even though there are highest number of OPC cases in this setting. Strengths include APACHE IV's pre-ICU LOS prediction which helps in predicting mortality rate, PSS's organ system-based grading (for ex: nervous system, cardiovascular system), SAPS III's inclusion of respiratory such as FIO2/PAO2 ratio and neurological parameters, and MSOFA's consideration of clinical signs like icterus which is included in piccle and also SPO2/FIO2 ratio. **Conclusion:** The study contributed to understanding the effectiveness and shortcomings of different prognostic scales, offering a basis for their potential improvement and more informed clinical use.

Keywords: Poison, Limitations, Strengths, Scales

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MINING TRANSCRIPTOMIC DATA FOR UNVEILING DISEASE SPECIFIC TARGETS LINKED WITH DUCTAL CARCINOMA IN-SITU FOR DRUG REPURPOSING CORROBORATED VIA IN SILICO APPROACHES

SHRAVANTH RAJANAHALLI MURTHY[1], G R SARASWATHY[1], RAKSHITHA N[2], JANHAVI BHARGAVA[1]

[1]Department of Pharmacy Practice, Faculty of Pharmacy, Ramaiah University of Applied Sciences, Bengaluru – 560054,
[2]Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Ramaiah University of Applied Sciences, Bengaluru – 560054,
Email: shravanthrm2001@gmail.com

Abstract

Background: Ductal Carcinoma in situ (DCIS) is an early invasive breast cancer. The compatibility of existing neoadjuvant therapy is severely limited, highlighting the urgent need for the development of novel therapeutic options to combat this challenging disease.

Objective: The primary objective of this study was to identify potential gene targets and explore drug repurposing strategies to uncover novel therapeutic agents for the treatment of DCIS.

Methods: Differentially expressed genes (DEGs) associated with Ductal Carcinoma In-Situ (DCIS) were extracted from the Gene Expression Omnibus (GEO) dataset GSE21422. Significant DEGs were identified using a cut-off p-value of < 0.01 and a $\log|FC| > 2$. Subsequently, a Protein-Protein Interaction (PPI) network was constructed using the significant DEGs and relevant genes from the NCBI Gene database through the STRING software. This analysis highlighted highly relevant genes with a greater node degree as potential therapeutic targets. To further explore these targets, a drug library was prepared using various databases, including DrugBank, Therapeutic Target Database, and STITCH. This process led to the identification of potential therapeutic agents. Molecular docking studies were done using AutoDock Vina, Discovery Studio, PyMOL, and PyRx to identify promising therapeutic agents.

Results: A total of 51 significant DEGs were identified. PPI network analysis highlighted TP53, CDKN2A, BIRC5, PTEN, and NTRK2 as key nodes with the highest degrees of connectivity. TP53 and NTRK2 DEGs were used for further In-silico molecular docking studies, which identified Aspirin and Amitriptyline drugs as the primary structure for TP53 and NTRK2 with the highest docking score of -7.8 for TP53 and -8.0 for NTRK2 in comparison with the standard structure.

Conclusions: Aspirin and Amitriptyline are potential drug candidates for repurposing. However, further in vitro and in vivo studies are necessary to validate these compounds and assess their efficacy in enhancing treatment outcomes for Ductal Carcinoma In-Situ.

Keywords: Drug Repurposing, Ductal Carcinoma In-Situ, Aspirin, Amitriptyline

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POST-MARKETING SAFETY ANALYSIS OF TIMOLOL IN REAL-WORLD SETTINGS USING BIOINFORMATICS AND DISPROPORTIONALITY ANALYSIS WITH FDA ADVERSE EVENT REPORTING SYSTEM (FAERS) DATA

SHRAVANTH RAJANAHALLI MURTHY[1]*, ESWARAN MAHESWARI[1], G R SARASWATHY[1], RAKSHITHA N[2]

[1]Department of Pharmacy Practice, Faculty of Pharmacy, M S Ramaiah University of Applied Sciences, Bangalore, [2]Department of Pharmaceutical Chemistry, Faculty of Pharmacy, M S Ramaiah University of Applied Sciences, Bangalore.
Email: shravanthrm2001@gmail.com

Abstract:

Background: Beta-blockers, especially Timolol, are commonly used in the treatment of hypertension, capitalizing on their ability to block Beta receptors in blood vessels and reduce blood pressure.

Objective: The study was conducted to unravel potential novel signals of Timolol to support patient safety and clinical decision-making.

Methods:A robust retrospective case and non-case disproportionality analysis of Timolol was performed using real-world data extracted from the US FDA Adverse Event Reporting System (FAERS) database. This disproportionality analysis employed advanced data mining algorithms, including Reporting Odds Ratio (ROR) and Proportional Reporting Ratio (PRR), with data sourced from the Open Vigil database. The threshold for identifying novel adverse reactions as positive signals was reactions having PRR≥2, ROR≥2, and N≥2. Proteins and genes implicated in these events were further investigated utilizing the PubMed gene database and STRING for protein target interaction analysis. Additionally, molecular docking simulations were performed using PyRX, PYMOL, BIOVIA Discovery Studio, and Swiss PDB Viewer to evaluate the binding affinities.

Results: The analysis revealed a total of 29661136 reactions recorded in the FAERS database, with 147 cases linked to Timolol. Signal detection analysis in the Open Vigil database identified 45 distinct adverse events for Timolol after high throughput screening. The novel signals are Macular degeneration with 5.11, Sciatica with 3.37, Dementia Alzheimer's type with 2.98 and Nodal Rhythm with 11.30 PRR. The total number of instances for the identified signals are 57, 41, 30 and 17. In-silico studies conducted on these drugs and their novel signals produced significant results, demonstrating strong binding affinities with highest binding scores of -6.6, -6.2, -5.3 and -5.5 for ESR1 (4Q50), CCR2 (8XYU), IFNG (1N6V), APP (5TPT) and EGFR (7V99) proteins that are involved in respective identified signals.

Conclusion: This study effectively identified significant adverse reactions that warrant further consideration. Future pharmacogenomic and pharmacoepidemiological investigations are critical to substantiate our findings.

Keywords: Timolol, FAERS, Molecular Docking, Signal Detection, Openvigil

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BIOINFORMATICS-GUIDED SIGNAL DETECTION OF COBIMETINIB INDUCED NEUROTOXICITY: MOLECULAR DOCKING OF ASSOCIATED GENES

BHUMIKA M*, E MAHESWARI,

Department of pharmacy practice, Faculty of Pharmacy, MS Ramaiah University of applied sciences, Bangalore, Karnataka-560054. Email: mbhumika182@gmail.com

Abstract

Background: Cobimetinib, a MEK inhibitor, is utilized in combination with vemurafenib for the treatment of BRAF V600E or V600K mutation-positive unresectable or metastatic melanoma. Signal detection helps to explore the novel adverse drug reactions (ADRs) of a medication.

Objectives: The current study aimed to identify cobimetinib induced neurotoxicity employing USFDA Adverse Event Reporting System (FAERS) database. Molecular docking was done to identify the association between the identified genes and neurotoxicity.

Methods: FAERS data was analyzed to identify a novel signal for cobimetinib. Disproportionality analysis was performed to identify the Reporting Odds Ratio (ROR) and Proportional Reporting Ratio (PRR) using OpenVigil database. Positive signals were defined as values of PRR≥1 and ROR-1.96SE>1. The genes and proteins associated with neurotoxicity were identified using KEGGS pathway, STITCH, STRING and HUGE navigator. Molecular docking process was performed and Cobimetinib binding affinity with the genes and proteins was identified using BIOVIA Discovery Studio, PyRx, Pymol and Swiss PDB viewer.

Results: In FAERS database, a total of 15,606,419 adverse events were reported. The USFDA approved the medication on 10 November 2015. A total of 3595 reactions were observed for cobimetinib. The OpenVigil data showed three events for neurotoxicity. The PRR was found to be 1.999 (0.645; 6.194) and ROR was 2.0 (0.644; 6.207) which confirmed neurotoxicity as a positive signal. The genes involved in neurotoxicity according to the databases are CASP3, SOD1 and TBK1 with the highest binding affinity of -8.4 for all the three genes.

Conclusion: The disproportionality analysis using OpenVigil database confirmed theassociation of cobimetinib with neurotoxicity. The CASP3, SOD1 and TBK showed binding affinity of cobimetinib and genes associated with neurotoxicity. Further molecular docking, pharmacoepidemiologic and pharmacogenetic analysis are required to establish the mechanism of the reported ADRs.

Keywords: Cobimetinib, Metastatic Melanoma, Neurotoxicity, Signal Detection, FAERS, Molecular Docking

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IN SILICO DISCOVERY OF POTENT TRANSTHYRETIN INHIBITORS FOR ALZHEIMER'S DISEASE: A COMPREHENSIVE COMPUTATIONAL APPROACH

SPOORTHI H J*[1], BANDRAL SUNIL KUMAR1, PARASURAMAN PAVADAI[1], JUDY JAYS[1]

Department of Pharmaceutical Chemistry, Faculty of Pharmacy, M S Ramaiah University of Applied Sciences, Bangalore.
Email: spoorthihj2001@gmail.com

Abstract

Background: Alzheimer's disease (AD) is a progressive neurological disorder with extracellular beta-amyloid (Aβ) plaque accumulation, loss of memory, and decrease in cognition. Treatment of AD can be envisioned as targeting TTR. Using structure-based drug design (SBDD), *in- silico* screening, and ADMET analysis, this study aims to identify new TTR inhibitors.

Objective: To identify a potent Transthyretin inhibitor for Alzheimer disease through the application of *In-Silico* studies.

Methods: To identify ligands with structural features analogous to the TTR binding site, pharmacophore modelling was performed on the Pharmit server. Data Warrior was utilized to retrieve 5280 structurally analogous molecules from the CHEMBL database and filter them based on their physicochemical properties. 33 lead compounds in total were chosen and docked with the TTR protein (PDB ID: 6EOY) utilizing AutoDock Vina and the PyRx interface. SwissADME platform was employed to predict the pharmacokinetic profiles and drug-likeness of the leading eight ligands.

Results: The docking values of -5.8 and -5.4 kcal/mol, respectively, CHEMBL388228 and CHEMBL198445 were found to be the best inhibitors by molecular docking. By hydrogen bonds, halogen interactions, and pi-alkyl contacts, these molecules demonstrated significant interactions with key TTR residues such as CYS10, VAL121, ARG104, and MET13. Their favourable properties, including tolerable molecular weight, LogP, hydrogen bond donors/acceptors, and surface area were confirmed by ADMET analysis, as well their conformance with Lipinski's Rule of Five. The low estimated toxicity of these compounds alsoindicates their suitability to be orally active CNS medicines.

Conclusion: This study efficiently employed a rigorous in-silico strategy to identify novel TTR inhibitors that could be therapeutically employed for the treatment of Alzheimer's disease. These findings illustrate the efficacy of integrating ADMET prediction, molecular docking, and pharmacophore modelling in the early stages of AD drug discovery. To confirm their efficacy and safety profiles, additional studies using molecular dynamics simulations and experimental validation are needed.

Key words: Alzheimer disease, Transthyretin, Pharmacophore Modelling, Molecular Docking

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EXPLORATORY SIGNAL DETECTION OF PEMETREXED-LINKED ADVERSE EVENTS IN FAERS: A DISPROPORTIONALITY ANALYSIS STUDY

ABDUL MANNAN FARUK AHMED*, ESWARAN MAHESWARI, G.R. SARASWATHY

Department of Pharmacy Practice, Faculty of Pharmacy, M.S. Ramaiah University of Applied Sciences, Bengaluru – 560054.
Email: abdulmannanfarukahmed25@gmail.com

Abstract:

Background: Pemetrexed is used in the treatment of non-small cell lung cancer and Malignant pleural Mesothelioma. Signal Detection helps in the identification of an unidentified adverse drug reaction for a drug.

Objectives: The study aimed to determine the novel signal that has been reported for Pemetrexed in the USFDA Adverse Event Reporting System (FAERS) database.

Methods: In the study, FAERS data was analysed to identify a novel adverse event for Pemetrexed. The Reporting Odds Ratio (ROR) and Proportional Reporting Ratio (PRR) values are obtained from the OpenVigil database. Positive signals were defined as values of AE>2, PRR≥2 and ROR-1.96SE>2. The genes and proteins associated with Addison's disease were found from various databases such as STITCH, STRING and HuGE Navigator. Later these genes were docked with Pemetrexed using BIOVIA Discovery Studio, PyRx, Pymol and Swiss PDB viewer.

Results: In the database, a total of 28655483 adverse events are reported. Out of them,11725 responses were linked to Pemetrexed since the drug got its approval by USFDA in 2004. The OpenVigil data showed 7 events of Addison's disease. The PRR was found to be 26.624 (12.637; 56.089) and ROR was 26.655 (12.641; 56.206) for Addison's disease which indicated a positive signal. The genes involved in Addison's disease according to the databases CYP2R1, NLRP1, HLA-DRB1, PTPN22, NUDT10, CCL5 and CTLA4 with the highest binding affinity of -9.2, -8.4 and -8.3, -8.3, -8.0, -7.1 and -6.8 respectively.

Conclusion: The results revealed that Pemetrexed may cause Addison's disease. The CYP2R1, NLRP1, HLA-DRB1, PTPN22, NUDT10, CCL5 and CTLA4 genes and proteins showed association between Pemetrexed and Addison's disease. These findings have to be confirmed, and further pharmacoepidemiologic research is required to increase the accuracy of the prevalence and/or risk factors of these events.

Keywords: Pemetrexed, Addison's disease, Signal Detection, Adverse Drug Reactions.

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NOVEL ADVERSE EVENT OF DARBEPOETIN ALFA: A DISPROPORTIONALITY ANALYSIS IN US FOOD AND DRUG ADMINISTRATION ADVERSE EVENT REPORTING SYSTEM(FAERS) DATABASE

ABDUL MANNAN FARUK AHMED*, ESWARAN MAHESWARI, G.R. SARASWATHY,

Department of Pharmacy Practice, Faculty of Pharmacy, M.S. Ramaiah University of Applied Sciences, Bengaluru – 560054Email: abdulmannanfarukahmed25@gmail.com

Abstract:

Background: Darbepoetin Alfa is used to treat anaemia that is caused due to a chronic kidney injury. Signal detection helps to identify an unidentified adverse drug reaction for a medication.

Objectives: The study aimed to determine the novel signals reported for Darbepoetin Alfa in the USFDA Adverse Event Reporting System (FAERS) database.

Methods: In the study, FAERS data was analysed to identify a novel signal for Darbepoetin Alfa. The Reporting Odds Ratio (ROR) and Proportional Reporting Ratio (PRR) values are obtained from the OpenVigil database. Positive signals were defined as values of PRR≥2 and ROR-1.96SE>2.

Results: In the database, a total of 27634809 was reported. Out of them, 39191 responses were linked to Darbepoetin Alfa since the drug was approved by USFDA in 2001. The OpenVigil data showed 7 events of Vascular Dementia. The PRR was found to be 5.877 (2.784; 12.403) and ROR was 5.878 (2.784; 12.407) for vascular dementia which indicated positive signals.

Conclusion: The results revealed that Darbepoetin Alfa may cause Vascular Dementia. These findings have to be confirmed, and further pharmacoepidemiologic research is required to increase the accuracy of the prevalence and/or risk factors of these events.

Keywords: Darbepoetin Alfa, Vascular Dementia, Signal Detection.

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FAERS-BASED DETECTION AND NETWORK MAPPING OF TRASTUZUMAB-INDUCED BILIARY SEPSIS

BINDU M A, RITESH GIRI

Department of Pharmacy Practice, Faculty of Pharmacy, M S Ramaiah University of Applied Sciences- Bengaluru
Email: binduamar24@gmail.com

Abstract

Background: Trastuzumab, a monoclonal antibody that is frequently used in the treatment of HER2-positive breast and stomach cancer. Concerns of its uncommon side effects are growing despite its well-established efficacy.

Objectives: The study aims to identify novel signals associated with Trastuzumab and perform network analysis of the signal.

Methods: Disproportionality analysis was performed using the FDA Adverse Events Reporting System (FAERS) with Open Vigil 2.1 software. Data-mining algorithms, including Reporting Odds Ratio (ROR) and Proportional Reporting Ratio (PRR), were applied to identify potential adverse drug reactions (ADRs). Signal was considered significant based on criteria from Evan's 2001, with parameters including n>2, Chi sq>4, and PRR>2. Then network mapping was implemented by using programs like Swiss Target Prediction, Gene Cards, PubChem, STRING, and Cytoscape to find the association between drug and adverse reaction.

Results: Disproportionality analysis showed a substantial signal that connected trastuzumab to biliary sepsis with Reporting Odds Ratio (ROR) and Proportional Reporting Ratio (PRR) values of 6.06 and 6.06, respectively, with a chi-squared value of 8.02 (Yates's correction). Additional network mapping revealed overlapping gene targets like PPARG, MTOR, and PI3KCG, which are implicated in inflammation. The dysregulation of cytokines like IL-6, IL-10, and TNF-α by trastuzumab may hinder bile flow and encourage bacterial colonization. Shared gene targets were revealed by comparative research with other monoclonal antibodies, specifically Rituximab and Adalimumab, suggesting a wider class impact among biologics with immunomodulatory action. **Conclusion:** The study not only reveals a potential molecular association between trastuzumab and biliary sepsis, but also underscores the importance of continuous post-marketing surveillance. It advocates for cautious use of trastuzumab and highlights the need for future research to validate these findings experimentally and clinically. Ultimately, this research contributes to improving drug safety and patient outcomes by advancing our understanding of drug-disease interactions and paving the way for more personalized and safer therapeutic approaches.

Keywords: Trastuzumab, Biliary sepsis, Disproportionality analysis, FDA Adverse Event Reporting System (FAERS), Open vigil 2.1.

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FAERS-BASED DISPROPORTIONALITY ANALYSIS AND MOLECULAR DOCKING REVEAL A POTENTIAL SIGNAL FOR ATORVASTATIN-ASSOCIATED GOUTY ARTHRITIS

YASHWANTH G R*, DR. E. MAHESWARI,

Department of Pharmacy Practice, Faculty of Pharmacy, M S Ramaiah University of Applied Sciences, Bangalore, Karnataka-560054. Email: yashwanthgrmsrpp@gmail.com

Abstract:

Background: Atorvastatin, a widely prescribed lipid-lowering agent, is associated with various adverse drug reactions (ADRs). Emerging concerns about its potential link to gouty arthritis necessitate systematic signal detection to evaluate this risk. **Objectives:** This study aimed to identify and assess potential signals for atorvastatin-associated gouty arthritis using the USFDA Adverse Event Reporting System (FAERS) database and explore molecular interactions via docking studies.

Methods: A disproportionality analysis was conducted using FAERS data. Reporting Odds Ratio (ROR), Proportional Reporting Ratio (PRR), and chi-square values were calculated via Open Vigil, with signals defined as PRR ≥ 2 and ROR - 1.96SE > 2. Bioinformatics tools (STITCH, STRING, HuGE Navigator) identified gouty arthritis-associated genes (SLC2A9, ABCG2). Molecular docking studies were performed using BIOVIA Discovery Studio, PyRx, and Swiss PDB Viewer to assess binding affinities.

Results: Analysis of FAERS reports identified 5 cases of gouty arthritis linked to atorvastatin. Statistical analysis revealed a PRR of 3.42, ROR of 3.41, and chi-square of 6.33, confirming a signal. Molecular docking demonstrated strong binding affinities for SLC2A9 (-7.3 kcal/mol) and ABCG2 (-7.3 kcal/mol), suggesting mechanistic involvement in urate transport dysregulation.

Conclusion: Gouty arthritis emerged as a potential signal for atorvastatin, supported by disproportionality analysis and molecular interactions with SLC2A9 and ABCG2. These findings highlight the need for clinical validation and pharmacogenetic studies to elucidate causality and risk mitigation strategies.

Keywords: Atorvastatin, Gouty Arthritis, Signal Detection, Molecular Docking, FAERS.

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ASSESSMENT OF KNOWLEDGE, ATTITUDE, AND PRACTICES REGARDING USAGE OF SELF-TESTING KITS FOR SEXUALLY TRANSMITTED DISEASES AMONG COLLEGE STUDENTS

MANOJ KUMAR G B, JEESA GEORGE, B.A. BHARATHI, GREESHMA B.S, UMMAI SALMA A, SPANDANA J, ADUSUMILLI PRAMOD KUMAR

Department of Pharmacy Practice, M S Ramaiah University of Applied Sciences, Bengaluru..
Email: manumahaveer2602@gmail.com

Abstract:

Background: Sexually transmitted diseases (STDs) are a growing concern among college students, driven by changing sexual behaviour and limited access to accurate sexual health information. While self-testing offers a private and convenient option for early detection, its uptake remains inconsistent due to varying awareness, stigma, and trust in reliability.

Objective: To assess the knowledge, attitude, and practices (KAP) regarding STD self-testing among college students and examine the influence of demographic factors on these domains.

Methods: A cross-sectional study was conducted among 401 college students aged 16 and above using a self-validated 24-item questionnaire. Descriptive statistics summarized the KAP scores, and associations with demographic variables (age, gender, marital status, academic background) were analyzed using p-values (< 0.05 considered significant).

Results: Overall, 91.5% of participants were aware of STDs, yet 80.1% had never seen an STD self-testing kit. Attitudes were largely positive, with 91.3% finding self-testing useful. But, 32.5% felt the procedure was difficult to perform & 86.5% emphasized the importance of post-test counselling and regular testing. In terms of practice, 29.8% reported being sexually active, 11.3% admitted to unprotected sex, but only 8% had ever used a self-testing kit. Statistically significant associations were found between KAP scores and variables such as age, gender, academic background, and marital status.

Conclusion: The findings highlight a promising level of awareness and openness among students toward STD self-testing, but also reveal a gap between positive attitudes and real-world practice. These results underscore the need for targeted health education initiatives, cost effectiveness, increased accessibility of self-test kits and efforts to reduce social stigma to promote safe sexual behaviours and early diagnosis among young adults.

Keywords: STDs, self-testing, knowledge, attitude, practice, college students, sexual health behaviour

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BREAKING THE SILENCE: UNDERSTANDING MENSTRUAL HEALTH CHALLENGES IN YOUNG GIRLS OF RURAL AREAS OF KADAPA DISTRICT, A.P.

N. SHYAMALA DEVI[1], S. SANDHYA RANI[2]

[1]Research scholar, Department of Botany, Sri Krishnadevaraya University, Ananthapuramu, Andhra Pradesh, India-515003.
[2]Assistant Professor, Department of Botany, Sri Krishnadevaraya University, Ananthapuramu, Andhra Pradesh, India-515003.
Email: shyamapms@gmail.com

Abstract

Background: Menstrual cycle is a natural biological process, which determines the reproductive health of future generations, yet it remains a neglected aspect of adolescent well-being mainly in rural areas where socio-cultural taboos, lack of awareness, inadequate access to sanitation pose significant challenges.

Objective: This study mainly aims to explore the different menstrual challenges experienced in young girls mainly, dysmenorrhea, amenorrhea, oligomenorrhea and also emotional fluctuations and the stigma and misinformation that often surround menstruation which pose severe impact on physiological and psychological health of young girls.

Methods: The data is collected through field surveys, interviews, structured questionnaires, and focus group discussions.

Results: The findings revealed that though they were provided with free sanitary napkins, the awareness regarding menstruation health is very low. There is a need to create proper knowledge to manage their menstrual issues without any hesitation and mis concepts. Hence, in addition the research examines and provides the role of natural therapies such as dietary changes, herbal medicines, yoga and mindfulness practices in managing menstrual discomfort and promoting overall reproductive health.

Conclusion: By understanding both the physiological and psychological aspects of menstruation evidence based natural approaches, this paper needs to provide complimentary menstrual health for adolescent girls, promoting awareness and accessible, non-invasive treatment methods for empowering young girls to manage their menstrual health confidently and sustainably.

Keywords: Menstrual health, adolescent, dysmenorrhea, amenorrhea, oligomenorrhea, reproductive health, physiological, psychological issues.

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PROGNOSTIC RELEVANCE OF TIMI RISK SCORE: A RETROSPECTIVE ANALYSIS OF ACUTE CORONARY SYNDROME

N. RAMYA KUMARI*, M. MANOJ KUMAR

Raghavendra Institute of Pharmaceutical Education and Research (RIPER) – Autonomous, Ananthapuramu, Andhra Pradesh.
Email: ramyakn1806@gmail.com

Abstract

Background: Patients presenting with acute coronary syndrome (ACS) without ST-segment elevation are diagnosed with unstable angina (UA) or non-ST elevated myocardial infarction (NSTEMI). These patients exhibit a wide range of risks for death and ischemic events. Proper management of NSTEMI/UA involves stratifying individual patient risk. TIMI risk score is used to stratify the risk for individual patients and to predict MACE. This, in turn, enables healthcare providers to make prompt clinical decisions, potentially reducing the risk of complications and the overall cost of treatment. In regions like India, where a significant portion of the population may have limited access to healthcare resources, utilizing the TIMI score can help identify high-risk patients early, allowing for more effective intervention and reducing the burden on healthcare systems.

Objectives: The TIMI risk score, which has been validated for use in such patients, helps to categorize them based on their risk and predict major adverse cardiac events (MACE).

Methods and Result: This retrospective, cross-sectional observational study included 250 patients diagnosed with NSTEMI/UA. Data was collected from medical records, and the TIMI risk score was calculated for each patient. The 14-day outcome was recorded, and the relationship between the TIMI score and patient outcomes was analysed. Descriptive statistics and chi-square analysis were used for comparison and regression analysis performed to explain correlation between TIMI parameters and TIMI score.The results revealed a 14-day mortality rate of 8.8%, with a significantly higher mortality rate observed among diabetic patients. A clear association was found between higher TIMI risk scores and worse 14-day outcomes.

Conclusion: An increased TIMI risk score is associated with a higher likelihood of MACE. Individual risk parameters have an effective influence in increased TIMI risk score The TIMI score serves as a simple, validated tool for risk assessment in ACS patients.

Keywords: Thrombolysis In Myocardial Infarction (TIMI), Acute Coronary Syndrome (ACS). Major Adverse Cardiac Events (MACE), Non-ST Elevated Myocardial Infarction (NSTEMI), ST Elevated Myocardial Infarction (STEMI), Unstable Angina (UA).

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AMITRIPTYLINE INDUCED FALLOT'S TETRALOGY: A NOVEL SIGNAL BASED ON REAL WORLD EVIDENCE-BASED STUDY

GLORY JENIFER S*, E MAHESWARI

Department of pharmacy practice, Faculty of Pharmacy, M S Ramaiah University of Applied Sciences, Bangalore, Karnataka-560054. E-Mail: dorathyjeni25@gmail.com

Abstract

Background and Objectives: Amitriptyline is a tricyclic antidepressant that increases serotonin and norepinephrine levels in the brain to treat depression. The current study used molecular docking and data-mining methods to find a potential side effect of amitriptyline.

Methods: The FDA Adverse Events Reporting System (FAERS) and the Open Vigil 2.1 software package, which is intended for comprehensive data analysis employing data-mining methods like Reporting Odds Ratio (ROR) and Proportional Reporting Ratio (PRR), were used to conduct the disproportionality analysis. According to the criteria of Evan's 2001, combination of drug and ADR with n>2, Chisq>4, PRR>2 is considered likely an adverse reaction. Using the KEGG pathway, BIOVIA discovery studio, Swiss PDB viewer, PyRx, and Pymol software, genes linked to signals were found and docked with Amitriptyline.

Results: The FAERS database contained reports of 722 cases of Fallot's tetralogy, with 4 linked to amitriptyline. There was a notable increase in adverse drug reactions (ADRs) associated with amitriptyline in 2019. The proportionality measures, ROR and PRR are 3.09 and 3.47 respectively. Yates's correction yields a chi-squared of 192.03. Amitriptyline demonstrated a binding affinity of -7.4 with genes CACNA1S and SCN4A associated with Fallot's tetralogy.

Conclusion: Fallot's tetralogy is considered as potential signal for amitriptyline. It is necessary for health care professionals to monitor patients while using this drug for the long term. Further research, particularly in pharmacogenetics, is warranted to better understand and mitigate adverse effects of amitriptyline.

Keywords: Amitriptyline, Fallot's tetralogy, Open vigil, Data-mining

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ROLE OF CLINICAL, PSYCHOLOGICAL, AND SOCIO-ECONOMIC FACTORS ON MEDICATION ADHERENCE AMONG ADULTS UNDERGOING HEMODIALYSIS

THANUJA S*, PRALAY DEY, RATHINDRANATH GOPE, PRIYANKA N.

Department of Pharmacy Practice, Nargund College of Pharmacy, Bangalore. E-Mail: priyaraji.cta@gmail.com

Abstract

Background: Medication adherence is essential for managing chronic kidney disease (CKD) in adults undergoing haemodialysis. Clinical, psychological, and socio-economic factors can significantly influence adherence, yet research examining their combined effects remains limited.

Objectives: This study aims to assess how clinical factors, such as pill burden and frailty, psychological factors like depression, and socio-economic factors, including living conditions and economic status, affect medication adherence in adults receiving dialysis.

Methods: A cross-sectional study was conducted in a tertiary care hospital in Bangalore, India, over six months (March-September 2024). Fifty-four hemodialysis patients were recruited using convenience sampling. Data on socio-demographics, clinical variables (e.g., frailty), psychological status (e.g., depression), and socio-economic status were collected via structured questionnaires and medical records. The 8-Item Morisky Medication Adherence Scale (MMAS) was used to assess adherence levels. Descriptive statistics and chi-square tests were used to analyze the relationship between these factors and adherence.

Results: Of the patients studied, 33.34% had low adherence, 22.22% had medium adherence, and 44.44% had high adherence. Non-adherence was significantly associated with frailty ($P<0.001$), depression ($P<0.001$), and socio-economic status ($P<0.01$). Patients with higher frailty scores and severe depression had lower adherence rates. Those from lower socio-economic groups also exhibited greater non-adherence. Age and the number of comorbidities further influenced adherence, with older patients adhering more consistently than younger.

Conclusion: Clinical factors, particularly frailty and medication burden, along with psychological factors like depression, strongly affect medication adherence in dialysis patients. Socio-economic factors also play a crucial role. Improving adherence will require a multidisciplinary approach that addresses the clinical, psychological, and socio-economic needs of these patients.

Keywords: Medication adherence, Frailty, Depression, Socio-economic status, psychological factors.

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REAL-WORLD ACTIVE SURVEILLANCE OF ADVERSE EVENTS FOLLOWING IMMUNIZATION IN CHILDREN: A HOSPITAL-BASED PROSPECTIVE COHORT STUDY

SOIBA SIDDIQUI*[1], M RAMESH[2], S N PRASHANTH[3]

***[1]Research Scholar, Department of Pharmacy Practice, JSS College Of Pharmacy, JSS AHER, Mysuru, India, [2]Professor, Department of Pharmacy Practice, JSS College Of Pharmacy, JSS AHER, Mysuru, India, [3]Professor & Head Department of Paediatrics JSS Medical College, JSS AHER, Mysuru, India.E-Mail:** drsoibasiddiqui@gmail.com

Abstract

Background: Active surveillance plays a crucial role in enhancing AEFI detection and assessment. Vaccines are essential for protecting children from serious diseases, though some may experience side effects called AEFIs. Passive surveillance often misses many of these events due to underreporting. Active surveillance ensures timely, accurate detection and better safety assessment.

Objectives: To determine the overall incidence and vaccine-wise distribution of Adverse Events Following Immunization in pediatric patients. To assess the severity and causality of reported AEFIs. To evaluate the organ systems most commonly affected by AEFIs in children.

Methodology: A six-month hospital-based prospective cohort study was conducted in the Department of Paediatrics at JSS Hospital, Mysuru. Pediatric patients receiving at least one vaccine dose were included, while those without consent were excluded. Data were collected using OPD records, immunization cards, and follow-up via observation (30 minutes post-vaccination) and telephonic contacts on Day 8 and Day 28. Data analysis by using descriptive statistics.

Results: A total of 5684 vaccine doses were administered to 2832 children, out of which 144 (5.08%) experienced AEFIs. A total of 157 AEFI events were reported, indicating that some children experienced more than one event. Most AEFIs were mild (49.7%) or moderate (48.4%), with only 1.9% being serious. All serious cases required hospitalization but recovered fully without fatalities. The Pentavalent vaccine showed the highest incidence (12.25%), followed by Quadrovax (8.69%) and DPT booster (5.55%). Causality assessment revealed that 96.82% of AEFIs had a consistent causal association (Category A), 3.18% were categorized under Category C: Inconsistent causal association to immunization. The most commonly affected system organ class was general disorders and administration site conditions (93.63%).

Conclusion: Active surveillance is an effective approach for detecting and evaluating AEFIs in children. The findings support the safety of routine immunization and highlight the importance of continuous monitoring to maintain public trust in vaccination programs.

Keywords: Adverse Events Following Immunization, Active Surveillance, Paediatrics, Vaccine Safety, Causality Assessment.

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DESIGN, SYNTHESIS AND EVALUATION OF DECAPRENYLPHOSPHORYL-B-D-RIBOSE-21-RIBOSE-21-EPIMERASE (DPRE1) TARGETING NOVEL PYRIDINE DERIVATIVES AS POTENT LEADS TO TREAT H37RV STRAIN OF TUBERCULOSIS

S. BABA FARHEEN, G. BALAJI NITISH, P. S. JAVEED, S. MAHABOOB PEERA, M. KIRAN SAI[1], M. VIJAYAJYOTHI[1*], C. NARESHBABU

Raghavendra Institute of Pharmaceutical Education and Research, K.R.Palli cross, Chiyyedu post, Ananthapuramu, Andhra Pradesh, India Email: babafardeen12@gmail.com, drmvjyothiriper@gmail.com

Abstract

Background: Tuberculosis (TB), caused by *Mycobacterium tuberculosis*, remains a major global health threat, particularly due to the emergence of multidrug-resistant (MDR) and extensively drug-resistant (XDR) strains. Novel therapeutic strategies targeting critical mycobacterial enzymes are crucial to combat drug resistance and improve treatment efficacy.

Objectives: This study aims to design, synthesize, and evaluate a new series of chalcone-based heterocycles - indazolopyridines, triazolopyridines, and cyanopyridines- as potential inhibitors of the DprE1 enzyme, essential for the cell wall biosynthesis of *M. tuberculosis* H37Rv strain.

Methodology: A series of 2-acetylpyridine-derived chalcones (C1–C10) were synthesized and cyclized into their respective heterocyclic derivatives (I1–I10, T1–T10, P1–P10). In-silico ADME profiling using SwissADME and molecular docking via Schrödinger's Glide assessed drug-likeness and binding affinities to DprE1 (PDB ID: 4FDO). Structural confirmation was achieved through IR, NMR, and mass spectrometry. Anti-TB activity was evaluated in vitro using the Luciferase Reporter Phage (LRP) assay.

Results: Compounds such as I7, T3, and P1 demonstrated excellent docking scores and >90% inhibition in the LRP assay, suggesting strong DprE1 binding and anti-tubercular activity. ADME results indicated favourable drug-likeness and solubility profiles for lead compounds.

Conclusion: The combination of rational drug design, computational screening, and experimental validation led to the identification of promising anti-TB candidates. The results highlight DprE1 as a viable drug target and suggest that further optimization of these lead molecules could yield novel therapeutics for MDR/XDR TB.

Keywords: Chalcones, Cyclic derivatives, Anti TB Activity, DPR E1, Luciferase assay.

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Patient's Opinion, Satisfaction And Reasons For Approach Cam Treatment For Infection: A Cross-Sectional Observational Study

BHUPALAM PRADEEP KUMAR[1], PRADEEP BATTULA[2*], KALI CHANDRA SHEKAR[3], SETLEM SAI VENKATA KRISHNA[4]

[1]Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research – Autonomous, Anantapur, Andhra Pradesh, India, [2]Department of Pharmacy Practice, Santhiram College of Pharmacy– Autonomous, Nandyal, Andhra Pradesh, India, [3]Department of General Medicine, Government Medical College, Rajamahendravaram, Andhra Pradesh, India, [4]Department of Biomedical Sciences, Edinburgh Napier University, Sighthill Campus, Edinburgh, Scotland.
Email: doctorbattulapradeep@gmail.com

ABSTRACT

Background: India follows the traditional medical systems of Ayurveda, Siddha, and Unani. The global interest in complementary and alternative medicine (CAM), particularly Indian medical traditions, is increasing. Modern facilities and the rapid scientific improvement of allopathic treatments have also restricted the growth of traditional medicine. This study aimed to determine the reasons for using CAM for the treatment of infections.

Methods: This was a multicenter study. This study was conducted at different sites to obtain information on CAM. CAM: Survey study reports about reasons for CAM approach, safety, and satisfaction with CAM treatment. This was a cross-sectional study to obtain data from the patients.

Results: A total300 patients, 174 (58%) were male and 126 (42%) were female from different systems of medicine. The mean age of patients who were approached for CAM survey was 35.42 years±13.68 (95% CI 33.87-36.96). The major reasons for approaching CAM were previous self-experience (14%), better cure (12.67%), permanent cure (11.33%), and belief (10.33%). However, 7% of the patients did not reveal their opinions on CAM. Structured open-ended questions were asked to determine their treatment preferences, medication usage, adherence, and experiences with both the benefits and adverse effects of CAM. The satisfaction level of patients on CAM was 4.35 ± 0.85 (4.25 to 4.44) on the 5-point Likert scale. This suggests that the majority of the patients rated their satisfaction levels between 4 and 5.

Conclusion: Patients with mild infections sought care from CAM. They approach CAM treatment for specific reasons, such as cost, side effects, and adherence. All the patients expressed satisfaction with the therapy they received.

Keywords: Antimicrobial resistance, Ayurveda, Bacteria, Complementary and alternative medicine, Homeopathy, Unani.

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"REVIEW ON AZETIDINONE HYBRIDS WITH SCHIFF BASES: SYNTHESIS AND BROAD-SPECTRUM PHARMACOLOGICAL PROFILING"

SINGIRISETTY TRIVENI*[1,2], G. VISHNUVARDHAN[2], K. VIJAYA BHASKAR [3], MALLELA VIJAYA JYOTHI[2]

[1]Research Scholar, RERDS-CPR, Manipal Academy of Higher Education, Manipal, 576104. [2]Department of Pharmaceutical Chemistry, RERDS-CPR, Raghavendra Institute of Pharmaceutical Education and Research campus, Ananthapuramu, 515721, Andhra Pradesh, India, [3] Department of Pharmaceutical Chemistry, Manipal College of Pharmaceutical Sciences, Manipal Academy of Higher Education, Manipal, 576104, Karnataka, India. Email: s.trivenipharma@gmail.com

Abstract

Objective: The present study seeks to investigate the possibility of new azetidinone derivatives as multifunctional medicinal agents by concentrating on their design, synthesis, and biological assessment. Improving antibacterial, antitubercular, anticancer, antifungal, and anti-inflammatory characteristics, this work incorporates Schiff bases into azetidinone scaffolds, drawing inspiration from the structural core of β-lactam antibiotics.

Methods: By combining Schiff bases with monochloroacetyl chloride and triethylamine, azetidinone derivatives were produced via a Staudinger [2+2] cycloaddition reaction. Methods such as thin-layer chromatography (TLC), melting-point analysis, Fourier transform infrared spectroscopy (FT-IR), proton nuclear magnetic resonance (H NMR), and mass spectrometry were used to analyse the produced chemicals. Assays for disc diffusion and minimum inhibitory concentration (MIC) were used to screen for antimicrobial and antifungal properties, the Resazurin Microtiter Assay (REMA) was used to assess tuberculosis activity, and MTT/SRB assays were employed to assess cytotoxic effects against MCF-7, L929, HeLa, and MDA-MB-231 cell lines.

Results: The synthesized compounds exhibited a broad range of biological activities. Compounds AZ01 and AZ03 showed significant antibacterial effects, particularly against *Pseudomonas aeruginosa*. AZ-9 demonstrated excellent antitubercular potential with a high docking score and significant inhibition in REMA assay. Compound AZ-13 revealed notable anticancer activity, especially against L929 cells. Moderate antifungal activity was observed against *Candida albicans* and *Aspergillus fumigatus*. Some derivatives also displayed anti-inflammatory potential via COX-inhibitory action.

Conclusion: The study concludes that azetidinone derivatives synthesized from Schiff bases possess promising pharmacological properties, making them valuable scaffolds for further drug development. Their multifunctional bioactivity warrants additional pharmacological and toxicological evaluations.

Keywords: Schiff bases, antimicrobial activity, azetidinones.

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SCREENING AND IDENTIFICATION OF DRUG-DRUG INTERACTIONS IN MEDICAL WARD OF SECONDARY CARE REFERRAL HOSPITAL

AMAR ALTIAB KHALID ALHAJ*[1], AKRAM SALIH FAYED OMER[1], MOHAMMED ABDELGADER MUSA ALI[1], MOHAMED DAWOUD MOHAMED IDRIS[1], B SAHITHI[2]

[1]IV B Pharmacy, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)- Autonomous, [2]Assistant Professor, Department of Pharmacy Practice, Raghavendra Institute of Pharmaceutical Education and Research (RIPER)- Autonomous

Abstract:

Objective: Drug-drug interactions (DDIs) can lead to significant adverse effects, reduced therapeutic efficacy, and increased healthcare costs, making their identification and management essential for improving patient safety and treatment outcomes. The current study aims to screen and identify drug-drug interactions in medical ward of secondary care referral hospital

Methods: It is a Prospective Observational Study conducted for a period of 6 months. 104 Prescriptions containing at least two medications during the hospital stay in the medical ward were included in the study. Prescriptions were screened for possible drug-drug interactions using Micromedex.

In this prospective study we evaluated the pDDI (possible drug-drug interactions) among prescribed drugs in 56 patients at hospital. Number of pDDI for each prescription were as 1 in 18 prescriptions, 2 in 27 prescriptions, 3 in 14 prescriptions, 4 in 9 prescriptions and more than 4 in 6 prescriptions. Out of all the identified pDDI 38 were minor, 21 were moderate interactions, 13 were major interactions.

Results: In our study, 17.6% of pDDIs were major; 28.4% were moderate and 51.3% were minor interactions whereas in a study by Abdullah K Rabba et al. major or moderate severity (43.6% (n = 681), 42% (n = 647), respectively), while only 14% (n = 224) were minor interactions. Most common drug interactions were found for the drugs Metformin, Ranitidine, Ciprofloxacin, Tramadol, Metronidazole, Furosemide, Aspirin, Amoxyclav, Vancomycin.

Conclusion: The study concludes that the frequency of pDDIs to be 71.15%. Further studies are required to see whether these interactions can be observed in patients clinically and how they are going to impact the health outcomes.

Keywords: Drug-Drug Interactions, Micromedex, Severity, Screening

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MYCOTOXINS: A COMPREHENSIVE REVIEW ON OCCURRENCE, TYPES, SYMPTOMS, DISEASES, AND CONTROL STRATEGIES

TANYA GOPAL[1], VAISHNAVI SUGUMAR[2], SEEMA THARANNUM[3], WAGDEVI P [4]

[1,2,3,4] **Dayananda Sagar University, Bangalore, India. Email:** seematharannum@dsu.edu.in

Abstract

Objective: According to the literature, researchers have elucidated that mycotoxins were naturally occurring secondary metabolites produced by fungi, molds, and saprophytes. These toxins were commonly found on various food items, such as maize, cereals, nuts, among others. Upon consumption, they had the potential to induce diseases in living organisms, particularly in humans. Symptoms associated with mycotoxin, such as aflatoxins, deoxynivalenol, patulin, among others, were found.

Methods: The occurrence and distribution of these mycotoxins were shown to be dependent on factors such as seasons and temperature variations. They posed a significant threat to both crops and living organisms.

Results and Conclusion: To mitigate their adverse effects, numerous strategies were proposed in past studies. These strategies included the implementation of innovative techniques like Cold Atmospheric Plasma (CAP) and the use of Natural Essential Oils (NEO). Advancements in technology had led to the development of novel methods aimed at combating the proliferation of mycotoxins.

Keywords: Mycotoxins, Aflatoxin (AF), Cold Atmospheric, Plasma (CAP), Hazard Analysis Critical Control Point (HACCP)

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DEVELOPMENT OF PROLIPOSOMES OF FERULIC ACID FOR THE MANAGEMENT OF NEURODEGENERATIVE DISORDERS

SOWMYASREE C.D

Research Scholar, Department of Pharmaceutics Sree Adichunchanagiri College of Pharmacy (SACCP), Mandya, Karnataka, India.
Email: sowmyadraj16@gmail.com

Abstract

Background: Neurodegenerative disorders such as Alzheimer's and Parkinson's disease pose major therapeutic challenges due to complex pathophysiology, poor solubility of neuroactive compounds, and restricted permeability across the blood-brain barrier (BBB). Ferulic acid, a natural polyphenol with potent antioxidant and neuroprotective properties, is limited by poor oral bioavailability and inadequate brain targeting.

Objective: To address these limitations, a proliposomal drug delivery system was developed to enhance the oral absorption and central nervous system delivery of ferulic acid.

Methods: Proliposomes are dry, free-flowing particles that transform into liposomes upon contact with aqueous media, offering improved drug solubility, stability, and controlled release. Pre-formulation studies, including solubility profiling, FTIR, DSC, and XRD, confirmed the compatibility of ferulic acid with lipid excipients. A validated UV and HPLC method was developed for accurate drug quantification in the formulation. Proliposomes were prepared using the slurry method and optimized through a Quality by Design (QbD) approach. A Box-Behnken design was employed to assess the effects of critical formulation variables, including Soy Phosphatidylcholine (SPC), Hydrogenated Soy Phosphatidylcholine (HSPC), and drug-to-phospholipid (DP) ratio.

Results: Seventeen experimental runs were conducted, resulting in particle sizes ranging from 105.63 nm to 520 nm and entrapment efficiencies between 82.87% and 96.00%. Statistical analysis using a quadratic model, validated through ANOVA, revealed significant effects of formulation variables. Run 6 was identified as the optimal formulation, with a vesicle size of 380.25 nm and an entrapment efficiency of 95.84%, highlighting the robustness of the QbD approach.

Conclusion: These findings support the effectiveness of proliposomes in enhancing the bioavailability and brain-targeted delivery of ferulic acid. Future studies will focus on in-vitro release, in-vivo pharmacokinetics, stability assessments as per ICH guidelines, and scale-up to establish therapeutic potential in neurodegenerative disease management.

Keywords: Proliposomes, Bioavailability, QbD approach, Alzhemier's disease, Parkinson's disease.

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A COMPARATIVE STUDY ON AWARENESS AND KNOWLEDGE OF CERVICAL CANCER AND HUMAN PAPILLOMAVIRUS AMONG ADOLESCENT GIRLS IN URBAN AND RURAL AREAS

SWATHI RAMESH T C[1*], SAVITHA R S[2], KIRON S S[3], SRIKANTH M S[4]

[1*] Ph.D. Scholar, Dept. of Pharmacy Practice, JSS College of Pharmacy, JSS AHER, Mysuru, Karnataka, [2]Associate Professor and Head, Dept. of Pharmacy Practice, JSS College of Pharmacy, JSS AHER, Mysuru, Karnataka, [3]Professor and Head, Dept. of Pharmacy Practice, College of Pharmaceutical Sciences, Govt. Medical College, Kannur, Kerala. [4]Lecturer, Dept. of Pharmacy Practice, JSS College of Pharmacy, JSS AHER, Mysuru, Karnataka. Email: swathirameshtc@gmail.com

Abstract

Background: Cervical cancer ranks as the fourth most prevalent cancer among women worldwide, with approximately 604,000 new cases and 342,000 deaths reported in 2020. Nearly all cases (99%) are associated with high-risk human papillomavirus (HPV) infections—a widespread virus primarily transmitted through sexual contact. Early awareness and education regarding cervical cancer and HPV are crucial in its prevention. Adolescents, especially girls, form a critical target group for awareness initiatives due to the availability of preventive measures such as HPV vaccination.

Objectives: To assess and compare the level of awareness and knowledge regarding cervical cancer and HPV among adolescent girls residing in urban and rural areas, and to implement educational intervention programs aimed at enhancing their understanding and awareness of HPV and cervical cancer.

Methodology: This interventional, comparative study enrolled 1,261 participants, meeting defined inclusion and exclusion criteria, from selected urban and rural schools in western Bengaluru. A pre-validated structured questionnaire was used to collect data.

Result: Only 4.8% were aware of HPV infections, cervical cancer, and the availability of HPV vaccines, while only 3.1% recognized the link between HPV and cervical cancer. Preliminary findings indicated a significantly higher level of awareness and knowledge in urban participants compared to their rural counterparts. Factors such as parental education, access to healthcare information, and exposure to school-based health education programs were associated with higher awareness levels.

Conclusion: The study highlights a considerable lack of awareness about HPV infection and cervical cancer among adolescent girls in both the urban and rural populations. Before the intervention, urban adolescent girls demonstrated slightly higher levels of knowledge and awareness than their rural counterparts. This implies that rural girls have limited access and fewer opportunities compared to urban girls in acquiring knowledge on important health issues. Implementing comprehensive educational strategies can contribute to better health outcomes. Raising public awareness remains essential in addressing this pressing health concern.

Keywords: Cervical cancer, Human Papillomavirus (HPV), Adolescent girls, Health Awareness.

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BIOANALYTICAL METHOD DEVELOPMENT AND VALIDATION OF SENSITIVE LC-MS/MS METHOD FOR THE QUANTIFICATION OF AXITINIB USING AXITINIB D3 AS INTERNAL STANDARD

KUPPIRALA SANDEEP CHAKRAVARTHI[1*], K. SOMASEKHAR REDDY[2]

[1]Department of Pharmaceutical Sciences, Jawaharlal Nehru University of Technology, Ananthapuramu, Andhra Pradesh, INDIA. [2]Department of Pharmacology, Raghavendra Institute of Pharmaceutical Education and Research, Chiyyedu Post, Ananthapuramu, Andhra Pradesh, INDIA. Email: ksandeepchakravarthy@gmail.com

Abstract

Background: Axitinib, a highly selective and potent VEGFR (Vascular Endothelial Growth Factor Receptor) tyrosine kinase inhibitor (TKI), has demonstrated efficacy in reducing vascular permeability, inhibiting angiogenesis and promoting tumor cell apoptosis. This work develops and validates a sensitive LC-MS/MS method for accurate quantification of Axitinib in human plasma for pharmacokinetic studies.

Objective: A highly sensitive, specific, rugged and rapid liquid chromatography tandem mass spectrometric method has been developed and validated for the quantification of Axitinib in human plasma using Axitinib D3 as an internal standard. **Methodology:** A liquid-liquid extraction method was employed for the extraction of analyte and Internal standard. A Zorbax Eclipse Phenyl column (100 * 3.0 mm, 3.5 µ) and an organic mobile phase consisting of Methanol and 0.1% formic acid in 10 mm Ammonium formate in a 60:40, v/v ratio were utilized in this method to highlight the modern trends in the bioanalytical method development and validation using the sophisticated LC-MS/MS technique.

Results: The total chromatographic run time was 4.0 minutes and the retention time of both analyte and internal standard were observed at ~1.72 minutes. The validated assay was found to be linear over the range of 0.20 to 125.00 ng/mL. The intended method was successfully validated for precision, accuracy, selectivity, matrix effect, stability parameters and all the experiments were found to be well within the specification limits.

Conclusion: The developed method for the quantification of Axitinib in human plasma was strictly validated in compliance with the FDA and EMA guidelines and is suitable for the pharmacokinetic profiling in human subjects.

Keywords: Axitinib, Axitinib D3, VEGFR, TKI, LC-MS/MS, Pharmacokinetics, FDA, EMA

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COST-EFFECTIVENESS ANALYSIS OF CEFTAZIDIME/AVIBACTAM VERSUS POLYMYXINS FOR THE MANAGEMENT OF CARBAPENEM RESISTANT ENTEROBACTERIACEAE INFECTIONS

PRAVALLIKA SATHYANARAYANA[1*], SHARADADEVI MANNUR Y[2], MAHADEVAMMA LINGAIAH[1]

[1]Department of Pharmacy Practice, College of Pharmaceutical Sciences, Dayananda Sagar University. [2]Department of Microbiology, Chandramma Dayananda Sagar Institute of Medical Education and Research, Dayananda Sagar University.
Email: pravs97@gmail.com

Abstract

Background: Carbapenem-Resistant Enterobacterales (CRE) represent a growing public health threat with limited treatment options and high mortality. This study evaluates the cost-effectiveness of Ceftazidime-Avibactam (CZA) ± Aztreonam compared to Polymyxins in the treatment of CRE infections from a healthcare payer's perspective in India.

Methods: A decision-analytic model was constructed to compare direct medical costs and outcomes associated with CZA versus Polymyxins. Clinical outcomes and probabilities were derived from real-world data involving 106 patients, with 41 receiving CZA and 65 receiving Polymyxins. The model incorporated drug acquisition, ICU stay, laboratory investigations, and adverse event management costs, obtained from hospital records. Quality-adjusted life years (QALYs) were estimated based on survival probabilities, life expectancy, and post-treatment quality of life. Sensitivity analysis and a cost-effectiveness acceptability curve (CEAC) were used to test model robustness.

Results: CZA resulted in higher survival (70.8%) compared to Polymyxins (43.1%), with a corresponding QALY gain (2.30 vs. 1.19). The total cost per patient was ₹4,25,731 for CZA and ₹2,87,331 for Polymyxins. The incremental cost-effectiveness ratio (ICER) was ₹1,24,042 per QALY gained. This ICER falls below the WHO-recommended threshold for highly cost-effective interventions (<1× GDP per capita ≈ ₹2,54,000 in India), indicating that CZA is a highly cost-effective alternative to Polymyxins.

Conclusion: Ceftazidime-Avibactam is a cost-effective and clinically superior alternative to Polymyxins for treating CRE infections in Indian ICU settings. These findings support its broader adoption in antimicrobial stewardship programs, especially in resource-limited healthcare settings with growing antimicrobial resistance.

Keywords: Cost-effectiveness analysis, Ceftazidime/avibactam, Polymyxins, Carbapenem-resistant Enterobacteriaceae

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DESIGN AND DEVELOPMENT OF A VALIDATED QUESTIONNAIRE TO ASSESS THE KNOWLEDGE, ATTITUDE, AND PERCEPTION OF MEDICAL PRACTITIONERS ABOUT ADVERSE DRUG REACTIONS DUE TO PRESCRIBING CASCADES AMONG ELDERLY PATIENTS

RAVINANDAN A P[1,2*], ESWARAN MAHESWARI[3]

[1*] **Research Scholar, Department of Pharmacy Practice, Faculty of Pharmacy, M.S. Ramaiah University of Applied Sciences, Bengaluru - 54, Karnataka, India.** [2]**Assistant Professor, Department of Pharmacy Practice, Sree Siddaganga College of Pharmacy, Tumkur, Karnataka, India.** [3]**Department of Pharmacy Practice, Faculty of Pharmacy, M.S. Ramaiah University of Applied Sciences, Bangalore, Karnataka, India.E-mail:** ravinandanap@gmail.com

Abstract

Background: Sometimes, adverse drug reactions (ADRs) are misinterpreted by healthcare professionals as new medical conditions, and new medications are prescribed to manage these ADRs intentionally or unintentionally. This process is termed 'prescribing cascade (PC),' a term coined by Rochan and Gurwitz in 1995. Knowledge and awareness of these PCs help to minimize unnecessary drugs added to prescriptions. Hence, this objective was designed to be conducted using a unique validation method.

Objective: To develop a validated questionnaire to assess medical practitioners' knowledge, attitude, and perception (KAP) of ADR due to PC among elderly patients.

Methodology: We referred to suitable literature to design KAP questionnaire validation steps, like content and face validation, and reliability was assessed through a cross-sectional pilot study.

Results: The questionnaire was modified based on the feedback of the framed expert panel. The Item- Content-Validity Index (I-CVI) score was 0.8–1.0. This value confirmed that the items were clear and understandable, and 0.79 modified kappa (K+) values indicated that the expert's agreement was not due to chance. The scale Content Validity Index (S-CVI/average) of 0.93 confirmed the scale's content validity. Through 13 end-user inputs, the item's Item-Face Validity Index (I-FVI) was found to be 0.92-1.0, which confirmed that the questions were clear and comprehensive. K+ 0.92-1.0 revealed that the agreement between the experts was not due to chance. The Scale Validity Index (S-FVI/Average) value of 0.99 confirmed the face validity. Reliability was assessed through a pilot study with 14 medical practitioners (MP). Most were unaware of PC and had a good attitude about ADR and PC. A Cronbach's alpha score of 0.865 indicated that the questionnaires were reliable and had high internal consistency (IC).

Conclusion: The systematic validation assisted in preparing a clear, understandable, and comprehensive questionnaire. The IC value further establishes and signifies the questionnaire's validation.

Keywords: Adverse drug reactions, content and face validity, elderly, prescribing cascade, questionnaire validation, reliability.

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EVALUATING %CV AS A PREDICTOR OF GLYCEMIC CONTROL IN TYPE 2 DIABETES USING CONTINUOUS GLUCOSE MONITORING

MOHAMMED AZHAR HUSSAIN*[1], MAHADEVAMMA LINGAIAH[1]

Department of Pharmacy Practice, College of Pharmaceutical Sciences, Dayananda Sagar University.
E-Mail: mohdazharhussain-rs-pha@dsu.edu.in

Abstract

Background: Glycemic variability, quantified using the percentage coefficient of variation (%CV), has emerged as an essential metric in diabetes management. Unlike traditional measures, %CV captures short-term glucose fluctuations and may serve as a predictor of glycemic control outcomes. The objective of this study is to explore the association between %CV and glycemic parameters, including time-in-range (TIR), time-above-range (TAR), time-below-range (TBR), average glucose, and glucose management indicator (GMI).

Objectives: To assess the association between %CV and glycemic metrics among Type 2 Diabetes Mellitus using CGM data.

Methods: A prospective observational study was conducted among individuals diagnosed with Type 2 Diabetes Mellitus. The study examined glycemic data by Continuous Glucose Monitoring over a 14-day period, with glycemic variability quantified as a Percentage Coefficient of Variation (%CV). Glycemic measures (TIR, TAR, TBR, average glucose, and GMI) were examined for associations with %CV. Regression analyses were used to find predictors of glycemic control.

Results: The study included 32 T2DM patients with Type-2 diabetes, comprising 17 Females (53%) and 15 Males (47%). Analysis of glycemic data found that the mean %CV was 24.29%, TIR (70.81%), TAR (23.34%), TBR (2.85%), Average Glucose (154.9) and GMI (7.01%). The %CV was found to be negatively correlated with TIR (r=-0.04357), TBR (r=-0.1304), Average glucose (r=-0.03725) and Glucose management Indicator (r=-0.04624). However, the %CV was positively correlated with TAR (0.2394).

Conclusion: The percentage coefficient of variation (%CV) correlates with key glycemic metrics, including reduced TIR, TBR, average glucose, GMI and increased TAR. These findings support %CV as an essential metric for evaluating glycemic control and guiding diabetes management strategies.

Keywords: %CV, Glycemic Variability, Time in Range (TIR), Time above Range (TAR), Continuous Glucose Monitoring.