SCIENTIFIC ABSTRACTS

SAROJINI NAIDU VANITA PHARMACY MAHA VIDYALAYA

(Sponsored by the Exhibition Society)
Affiliated to Osmania University, Approved by PCI, New Delhi

NBA Accredited **B.PHARMACY COURSE**

Commemorating Silver Jubilee Celebrations

INDO-US SUMMIT - 2024

"Innovations in Pharma Education, R&D, Regulatory, Marketing & Pharmacy Practice"

5th June to 7th June, 2024

Venue: Tagore Auditorium,
Osmania University Campus, Hyderabad.

12-5-31/32,
Lane opposite to St. Anns High School,
Vijayapuri Colony,Tarnaka,
Secunderabad, Telangana-500017
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Our Inspiration

Smt. Sarojini Naidu

(1879 - 1949)

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Scientific Abstracts

PREFACE

The field of pharmaceutical science is a dynamic and rapidly growing discipline. It integrates various scientific areas crucial for discovering and developing new NCE's which are safe and efficient for the management of various ailments. In recent times, pharmaceutical professionals have made significant contributions globally to improve human suffering by discovering and developing novel medications. As we navigate the demands of the 21st century, institutions worldwide are continuously seeking to enhance their research capabilities and achieve excellence in this domain. Staying informed about the latest advancements in the ever-evolving pharmaceutical sector is paramount. In this spirit, our institution, Sarojini Naidu Vanita Pharmacy Maha Vidyalaya (SNVPMV) is proud to host a three-day INDO-US SUMMIT-2024 mainly focusing on "Innovations in Pharma Education, R&D, Regulatory, Marketing & Pharmacy Practice". This event commemorates the institute's silver jubilee celebrations.

The prestigious INDO-US SUMMIT-2024 convenes leading minds from India and the US to explore new frontiers in pharmaceutical science, fostering deeper understanding of drug development under evolving regulations, sparking young mind's interest in research, and facilitating valuable interaction between academia, industry, and researchers of all levels. This commemorative Souvenir of Scientific Abstracts provides a comprehensive overview of the summit's goals and its extensive agenda. Key topics encompass cutting-edge advancements in drug discovery techniques, the ever-changing regulatory environment, and the most critical issues is shaping the pharmaceutical landscape.

The INDO-US SUMMIT-2024 souvenir delves into the specific presentations led by experts from academia, industry, and regulatory bodies. These presentations offer valuable insights on a variety of topics critical to the pharmaceutical field. From establishing standards for complex generic drugs to navigating the intricacies of drug discovery and FDA approval, the summit tackles the journey of a medication from conception to market. Additionally, it explores the importance of safety in anti-muscarinic medications for seniors, while also inspiring future generations of pharmacy students. The business side of pharmaceuticals is addressed through analysis of the R&D to Rx process. The summit also emphasizes the contemporary challenges, exploring work-life balance for women and strategies for success in a competitive industry. Finally, it looks towards the future by examining the evolving landscape of pharmaceuticals and the growing collaboration between physicians and pharmacists. Over three days, eminent scientists from prestigious Universities, R&D centres and Medical centres across India will deliver lectures in dedicated scientific sessions. The summit will showcase over 300 abstracts, encompassing 200 research papers and over 100 review articles, covering various aspects of

pharmaceutical sciences. These will be presented through invited lectures, oral presentations, and poster sessions.

The summit boasts participation from over 250 delegates from across India, including Maharashtra, Tamil Nadu, Rajasthan, and Andhra Pradesh. We appreciate the presence of delegates from renowned institutions like Osmania University, Kakatiya University, JNTU, GITAM University, SRM University, NIPER and several others. The INDO-US SUMMIT-2024 Organizing Committee extends its heartfelt gratitude to a multitude of individuals and organizations whose contributions were vital to the summit's success. We are especially indebted to the Management of Sarojini Naidu Vanita Pharmacy Maha Vidyalaya and the Sponsors of Exhibition Society for their leadership and support in hosting this prestigious event. The Expert Advisory Committee members from various facets of pharmacy profession, principals, colleagues, and well-wishers from pharmaceutical institutions & industries located in and around Hyderabad offered invaluable expertise and encouragement, shaping the summit's agenda. Our deepest appreciation goes to the dedicated teaching and non-teaching staff and students of SNVPMV's for their tireless efforts, ensuring the smooth run of the summit. The unwavering support, expertise, and dedication of all involved were truly instrumental in making the INDO-US SUMMIT-2024 a resounding success.

Organizing Committee
INDO-US SUMMIT - 2024

CONTENTS

SAROJINI NAIDU VANITA PHARMACY MAHA VIDYALAYA

College for Women (Sponsored by The Exhibition Society), Tarnaka, Secunderabad
Affiliated to Osmania University, Approved by AICTE & PCI
ISO: 9001:2015 Certified Institution
NBA Accredited B. Pharmacy Course

Ref.: SNVPMV/150 Date: 25/05/2024

Message

As chief patron of this prestigious event, It gives me immense pleasure to greet and welcome the Distinguished Guest Speakers, dignitaries from Pharma Fraternity, Allied Associations, Members of Sponsoring Body, Exhibition Society, Advisors, Industry, Academia & Student Delegates to the Indo-US Summit – 2024 being organized by our Prestigious Institution, Sarojini Naidu Vanita Pharmacy Maha Vidyalaya from 5th June 2024 to 7th June 2024 Commemorating the Silver Jubilee Celebrations of our Institution.

The theme of this Indo-US Summit is, "**Innovations in Pharma Education, R&D, Regulatory, Marketing & Pharmacy Practice".**

It is a proud privilege to host this Gala International Event, at the Tagore Auditorium, situated in the picturesque campus of Osmania University. I hope the Indo-US Summit would enable the delegates to have fruitful discussions and better sharing of Knowledge & Experience in terms of learning the latest advancement in Pharmaceutical Industry from the Participating US based and Nationally acclaimed Speakers. We shall try our best to ensure that this Indo-US Summit will bring out transformation in the field of Pharmacy, Education & Industry with special focus on the betterment of the lives of the people.

We have chosen experts from Academia and Industry to chair the Scientific Sessions and to give their input in their respective fields. I am happy to learn a very good response from students and faculty for participation in the Scientific oral and poster presentation. I wish the student delegates as well as the faculty members to use this platform for sharing the scientific ideas and latest developments in the field of Pharmacy by the learned speakers.

I wish all my team members who are striving their best in the conduct of this Indo-US Summit a great success.

Lastly, I express my deep gratitude to our sponsors Exhibition Society for encouraging us to Organize such a mega event with the required funding.

B. Prabha Shankar

Dr B. Prabha Shankar
Chairman

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Chairman

Dr. A.V. Srikanth
Vice Chairman

Sri Sainath Dayakar Shastri
Hon. Secretary

Sri V. Jairaj
Hon. Treasurer

Smt. Depala Sandhya
Joint Secretary

Ref.: SNVPMV/162

Date : 24/5/2024

MESSAGE

As Vice Chairman of our institution, the Sarojini Naidu Vanita Pharmacy Maha Vidyalaya, it is my proud privilege to patronize the Indo-US Summit on **"Innovations in Pharma Education, R&D, Regulatory, Marketing and Pharma Practice"**.

Looking at the galaxy of eminent speakers from India and the US, I am sure that this Summit would go a long way in enriching the Pharma fraternity with the latest innovations in their respective fields. Besides these scientific sessions, a platform is also created for encouraging Scientific oral/ poster presentation competition among the faculty and students of the institutions to foster their knowledge and skills in various specialisations in Pharmacy.

It is heartening to note the enormous response of about 300 abstracts covering all the specialisations clearly shows the interest and zeal evinced, depth of knowledge and R, D&I approach of the participants.

The evaluation, acceptance and unbiased judgement in deciding the best presentation is a herculean task.

I congratulate all the participants for their endeavours and wish them all the best. The idea of the Scientific Committee to bring out a separate compendium of these Abstracts is highly commendable.

I wish this Indo- US Summit a grand success and congratulate our Institution for celebrating the Silver Jubilee Year 2024.

(Dr. A. V. Srikanth)
Vice Chairman

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Ref.: SNVPMV/2024/165 **Date : 24-05-2024**

MESSAGE

A Message from the Chief- Convenor: Advancing Pharmaceutical Innovation Together

On behalf of the organizing committee, it is with immense pride that I welcome you to the inaugural of Indo-US Summit on 'Innovations in Pharmaceutical Research & Technology'. This prestigious international event, hosted by Sarojini Naidu Vanita Pharmacy Maha Vidyalaya (SNVPMV) to mark its Silver Jubilee celebrations, embodies a spirit of collaboration and a collective vision for shaping the future of pharmaceutical science.

The Indo-US Summit 2024 brings together a distinguished assembly of renowned experts, leading scientists, and passionate researchers from across the globe, particularly from India and the United States. Over the course of this summit, we will engage in stimulating discussions, share cutting-edge advancements, and explore the most pressing challenges and opportunities impacting the pharmaceutical landscape today.

A key highlight of the summit is the platform it provides for young minds and future leaders in field of pharmacy. We are particularly excited to witness the innovative research showcased in the poster and oral presentations. I am sure we will find newer ideas emerging from these presentations which lead to innovations and would be of use to meet the unmet needs.

The knowledge and connections fostered during this summit hold immense potential. We believe the Indo-US Summit 2024 will serve as a catalyst for ground-breaking discoveries and transformative advancements in the years to come. This commemorative souvenir serves as a lasting record of this significant event.

I extend my heartfelt gratitude to all the participants, speakers, chairs, adjudicators, and sponsors who have made the Indo-US Summit 2024 possible. Let us seize this opportunity to collaborate, share knowledge, and inspire each other as we strive to build a brighter future for pharmaceutical research and development.

Sincerely,

P Vangala

V. Pradyumna
Chief-Convenor
Indo-US Summit 2024

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Ref.: SNVPMV/ 2024/163 **Date :** 24/05/2024

MESSAGE

Sarojini Naidu Vanita Pharmacy Maha Vidyalaya (SNVPMV) is a constituent of the Exhibition Society, which is dedicated for the upliftment of women in the State of Telangana. Silver Jubilee is an important milestone for SNVPMV which believes in transforming ordinary students into extraordinary professionals through rigorous teaching and learning processes powered by technology and driven by values.

SNVPMV is known for excellence in quality pharma education for which student-centered teaching, outcome-based learning goals, continuous performance evaluation, strong alumni base, and ever-supportive recruiters are the contributing factors. The institute has the focus on a multidisciplinary research culture fostered through well-developed processes and systems that promote research. The research activity is encouraged through MOUs with leading industries, and participation in conferences, workshops, departmental seminars by eminent industry experts.

SNVPMV takes a unique and innovative approach in education that focuses on providing the right knowledge, imparting the right skills for enduring success in pharma careers, and shaping the right attitudes.

The institute's Student Clubs encourage the students to participate in co-curricular and extra-curricular activities helping them to develop team spirit and leadership qualities. Precisely, SNVPMV means a pleasant and peaceful world of learning and transformation

In the next 25 years towards Golden Jubilee, our mission is to seamlessly transcend the notion of inculcating future leaders with the skills needed to ultimately achieve the societal necessity of quality, safe, effective, affordable and innovative medicines to the citizens of India.

N. Srinivas

(Dr. N. SRINIVAS)
DIRECTOR

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Ref.: SNVPMV/ 2024/164 **Date :** 24/05/2024

MESSAGE

Happy to give a message as the Principal of Sarojini Naidu Vanita Pharmacy Maha Vidyalaya (SNVPMV), the prestigious institute.

I welcome all the Pharmacy fraternity for this three day Indo US Summit on "Innovations in Pharma Education, R&D, Regulatory, Marketing & Pharmacy Practice".

I hope everyone is excited to listen to the excellent speakers from the USA & India. It's a great opportunity for the budding pharmacists to interact with Pharma Professionals having more than 30 years of experience in their respective fields.

The presenting authors in the scientific presentations are given the chance of publishing the full text articles in the Scopus indexed journal.

My heartfelt thanks to all the Principals and faculty of OU, JNTU, KU affiliated colleges for getting registered and motivating the students to participate in this Indo US Summit.

I wish this summit to be a great success with coordinated efforts of management, staff and students of SNVPMV.

(Dr. T. MAMATHA)
Principal

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Ref.: SNVPMV/ 2024/205 **Date :** 28/05/2024

MESSAGE

It is indeed a great pleasure to share our happiness of the Silver Jubilee Celebrations of our esteemed Institution- "Sarojini Naidu Vanita Pharmacy Maha Vidyalaya(SNVPMV)", Sponsored by the Exhibition Society and affiliated to the oldest and most prestigious Osmania University, Hyderabad, Telangana state, India. On behalf of the entire crew of SNVPMV, I extend a hearty welcome to all of you to the three day INDO-US SUMMIT-2024 commencing from June 5th, 2024 to commemorate this momentous occasion.

The key features of this summit include the exciting sessions delivered by 6 renowned Pharma Professionals from USA and 4 eminent Indian Stalwarts, chaired by 21 popular Academicians and Researchers, Industrial Pharma experts and Drug Regulators of India. We are glad to receive over 300 scientific abstracts from researchers working in various disciplines of Pharmaceutical Sciences across the country. The responses from the delegates (students, research scholars and faculty members) is overwhelming. We are confident that this conference will create an excellent platform to listen and understand the current scenario of the Pharmaceutical Industry, for scientific interactions and knowledge sharing and to foster research collaborations to work on the Pharmaceutical thrust areas, innovate and ultimately contribute to improve the healthcare worldwide.

The Organizing committee is meticulously planning and taking utmost measures for the successful conduct of the INDO-US SUMMIT-2024. I appreciate the efforts of all the teaching and non-teaching staff of SNVPMV, working for various committees in making the necessary arrangements.

In this context, the scientific team has been working overtime to organize the sessions and scientific presentations, to compile this abstract book containing the research contributions of the delegates presenting during this summit. I sincerely thank the members and student volunteers of the scientific committee for their continued support to accomplish this herculean task in limited time span. I express my gratitude to the HODs of various departments of SNVPMV for their contribution in reviewing, improving and managing the quality of the scientific presentations. Thanks to Mrs.B.Prasanti and her team from Catalysis Advertising India Pvt. Ltd. for timely support and making the hard copies of abstract book available on time.

I am extremely thankful to the Management of SNVPMV for giving me this opportunity and I am sure that the proceedings of the INDO-US SUMMIT-2024 will set a new benchmark for successive conferences and create an everlasting impression and pleasant memories to all the delegates.

With best wishes and regards to all.

K. Sirisha

Dr.KALAM SIRISHA
VICE-PRINCIPAL, SNVPMV
Co-Convenor & Scientific Committee Coordinator
INDO-US SUMMIT-2024, Hyderabad

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Ref.: SNVPMV/ 2024/200

Date: 28/05/2024

MESSAGE

The Department of Pharmaceutical Chemistry extends its warmest congratulations on momentous occasion of Indo-US summit-2024 with the theme Innovations in Pharma education,R&D,Regulatory.Marketing & Pharmacy practice and Silver Jubilee Celebrations of Sarojini Naidu Vanita Pharmacy Maha Vidyalaya. As the Head of the Department of Pharmaceutical Chemistry and a Professor, I started my career in this esteemed college in the year 1999. My pursuit of knowledge is further exemplified by my Ph.D. which is obtained in the year 2011. My research interest lies in heterocyclic molecule synthesis, with a focus on phytochemical analysis, pharmacological activity screening, and drug design. My contributions are reflected in over 25 publications in reputed journals and a book chapter. I have been acknowledged by Osmania University as a PhD supervisor, examiner for M.Pharm and panel member of the Phd final viva voce. One of the department's strongest points is its teachers, . They are incredibly committed, hardworking, and engaged in research. Our department is credited with around 70 publications in various National and International journals. I am grateful to the management for supporting my career advancement.

Warm regards

Prof.S.Hemalatha

Head of Pharmaceutical Chemistry

SNVPMV

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Ref.: SNVPMV/ 2024/201 **Date :** 28/05/2024

MESSAGE

Dear Colleagues, Students, and Esteemed Guests,

Welcome to the Indo-US Summit 2024, hosted by Sarojini Naidu Vanita Pharmacy Maha Vidyalaya (SNVPMV) as part of our Silver Jubilee Celebrations, held from June 5th to June 7th, 2024, at Tagore Auditorium, Osmania University, Hyderabad. Titled "Innovations in Pharmaceutical Research & Technology," our summit gathers global leaders to cover a broad spectrum of topics, fostering collaboration and innovation in drug discovery, biopharmaceuticals, regulatory compliance, and emerging technologies like AI and 3D printing. As Head of Pharmaceutics, I'm excited about highlighting the latest advancements and addressing global challenges in pharmaceutical sciences. Key highlights include AI-driven drug discovery, breakthroughs in biopharmaceuticals, and emerging technologies like CRISPR and 3D printing. Distinguished speakers from Texas A&M University and the University of Houston will share insights, alongside interactive workshops and cultural programs. This summit celebrates 25 years of progress and underscores our commitment to excellence. My sincere thanks to all who made this event possible, and I encourage everyone to network, engage, and contribute to shaping the future of pharmaceutical research and technology.

Warm regards,

B. Haarika
(Prof. B. Haarika)
Head of Pharmaceutics

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Ref.: SNVPMV/ 2024/202 **Date :** 28/05/2024

Message

Welcome esteemed colleagues, to the Indo-US Summit-2024, an international conference on Innovations in Pharma Education, Research & Development, Regulatory, Marketing & Pharmacy Practice.

The department of Pharmacology and Pharm.D of Sarojini Naidu Vanita Pharmacy Maha Vidyalaya is thrilled to be part of this landmark event, bringing together a vibrant community of educators, and researchers, from across the globe. The theme, "Innovations in Pharma," reflects the dynamic and ever-evolving nature of our field. This conference provides a crucial platform to share cutting-edge advancements in all aspects of pharmaceutical sciences from novel educational methods to ground breaking research discoveries, and ultimately, to advancements in patient care.

The abstracts presented here represent the collective effort of passionate minds dedicated to pushing the boundaries of pharmaceutical science. They offer a glimpse into the future of our profession, exploring ways to bridge the gap between theoretical knowledge and real-world applications. This conference serves as a catalyst for progress, fostering a collaborative environment where we can learn from each other and accelerate the translation of scientific discoveries into tangible benefits for patients worldwide. Let us embrace the spirit of innovation and work together to shape a brighter future for pharmacy

Dr Venu Talla
Professor & Head
Department of Pharmacology & Pharm D

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Ref.: SNVPMV/ 2024/203 **Date :** 28/05/2024

MESSAGE

The Department of Pharmaceutical Analysis at SNVPMV is proud to be part of the Indo-US Summit's commemorative souvenir. This prestigious event, coinciding with our Silver Jubilee, reinforces our commitment to excellence in pharmaceutical analysis.

The summit fosters collaboration and knowledge exchange on crucial topics like cutting-edge analytical techniques and evolving drug quality assurance regulations, perfectly aligning with our department's focus. We actively encourage faculty and students to stay updated, and the summit's presentations on biopharmaceuticals, personalized medicine, and complex generics provide invaluable insights that benefit our academic and research endeavors.

The department is particularly interested in the role of academics in setting standards for complex generics, as robust analytical methods are vital for ensuring medication quality, safety, and efficacy. This summit emphasis motivates us to train future generations of pharmaceutical analysts to contribute significantly to this critical field.

We are actively fostering a research culture within our curriculum, encouraging exploration of emerging analytical techniques in developing and analyzing novel drug delivery systems. We believe the summit's presentations on the impact of structural biology on drug discovery will further inspire our students to delve deeper into these exciting scientific advancements.

The knowledge and connections forged at the Indo-US Summit will undoubtedly have a lasting impact on the future of pharmaceutical research and development. This commemorative souvenir serves as a testament to this landmark event.

The Department of Pharmaceutical Analysis extends its sincere gratitude to everyone making the summit a success. We look forward to actively participating in future collaborations that advance pharmaceutical analysis and contribute to safe and effective medicines for all.

P. Vivek

Dr. P. Vivek Sagar
Head, Department of Pharmaceutical Analysis

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Ref.: SNVPMV/ 2024/204 Date: 28-5-2024

MESSAGE

On this momentous occasion of the INDO-US summit-2024 with the theme, 'Innovations in Pharma Education, R&D, Regulatory, Marketing and Pharmacy Practice' organized by Sarojini Naidu Vanita Pharmacy Maha Vidyalaya commemorating its Silver Jubilee celebrations, the Pharmacognosy Department extends its heartfelt Congratulations. For 25 years, our college has nurtured a vibrant academic environment and the Pharmacognosy Department is proud to have played a significant role in this journey. I have been working as an Associate Professor, HOD of Department of Pharmacognosy with 8 years of teaching/research experience. I have one patent publication, a book chapter, and 23 publications in various National and International journals. Pharmacognosy department celebrates the dedication of faculty members, me along with Mrs. Leemol Varghese, Ms. P. Sri Varsha, who have instilled a passion for this unique field. Our department is credited with 34 publications, and several oral and poster presentations. As the Pharmacognosy Department, we look forward in continuing to contribute to this legacy in the years to come. We are excited to embrace new discoveries and advancements in natural product research, ensuring that our students remain at the forefront of this ever-evolving and reemerging field. We extend heartfelt gratitude to our dedicated faculty, both past and present, who have ignited a passion for this captivating field in countless minds. Entire faculty of Pharmacognosy Department heart fully Congratulates college for its 25 years of excellence and continue to educate and empower generations of students to come.

Dr. P. PRANEETHA
HOD, Dept of Pharmacognosy

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ABOUT INDO-US SUMMIT

Welcome to the Indo-US Summit 2024 : Innovations in International Pharma Education, R&D, Regulatory, Marketing & Pharmacy Practice. This prestigious three - day International level Conference is set to gather renowned Pharma experts & leading Scientists from US, Physician, Psychologist and Marketing Professionals across India. Our summit promises to deliver cutting-edge talks on the latest advances, technologies and developments spanning the entire pharmaceutical spectrum. From groundbreaking transformations in pharmaceutical education to the revolutionary impact of 3D printing technology, navigating from regulatory changes to understanding the intricacies of the FDA approval process and the latest trends in Regulatory, Marketing & Pharmacy Practice. Our agenda covers a wide array of critical topics. Attendees can expect enlightening sessions on new drug discovery, generic product development, product quality assurance, and the latest global trends in Pharmaceutical & Biotech Education, R&D, Practice and Marketing. Furthermore, our sessions will delve into Pharmacoepidemiology, Pharmacovigilance and emerging opportunities and challenges for Indian pharmaceutical graduates in the dynamic global pharmaceutical landscape. This summit serves as a pivotal platform for fostering collaboration, sharing insights, and catalyzing breakthroughs in pharmaceutical R&D by establishing possible networking. The Summit also emphasizes the Indian Regulatory updates & compliance strategies to navigate the evolving regulatory landscape and ensure product quality, safety, and efficacy. By bringing together researchers, scientists, industry leaders and regulatory experts from US & India, this Summit aims to inspire collaboration, drive innovation, and accelerate the translation of cutting-edge science into transformative therapies that improve health outcomes and quality of life. Join us at the Indo-US Summit on Innovations in Pharma Education, R&D, Regulatory, Marketing & Pharmacy Practice, to be at the forefront of the pharma revolution and contribute to shaping the future of medicine. We are also organizing Scientific Oral and Poster Presentations & Pharma Intercollegiate Dance Competitions. So get ready for an immersive experience filled with invaluable insights and unparalleled learning.

ABOUT EXHIBITION SOCIETY

The Exhibition Society is a non-profit organization registered under the Companies Act 1956. It was started in the year 1938, by Osmania Graduates Association (OGA) to promote industrial development in the erstwhile Hyderabad State by organizing industrial exhibitions to promote products manufactured by small and medium scale industries within the country. This is perhaps the only instance in the world where the alumni of Osmania University have been responsible for establishing educational institutions for the needy and support them financially by conducting an industrial exhibition every year.

The Exhibition Society was formally registered in 1944 with the following objectives:

- Promote social, economic and industrial environment in the state in particular and in the country in general.
- The Exhibition Society will be used as a medium to educate people and to project an image of self-reliance and self-help.
- The membership will be limited and members will not be paid any remuneration for the work rendered and that all the profits and savings will be utilized for development purposes.

The Exhibition Society conducts the All India Industrial Exhibition (AIIE) every year, popularly knownas “Numaish”.

The1st AIIE was conducted at Public Garden in 1938 and the venue was shifted to the present Exhibition Grounds in Nampally in 1946. The Exhibition Society celebrated its Silver Jubilee in 1965, Golden Jubilee in 1998, Diamond Jubilee in 2000 and Platinum Jubilee in 2015.

The All India Industrial Exhibition is a heritage event closely woven into the ethos and history of Hyderabad and the citizens eagerly wait for it every year. Many State Govt. Departments, such as, Police, Fire & Disaster Management,

Electricity, GHMC, R&B, RTC, Metro, etc., participate and facilitate in the smooth conduct of the event.

Over the years several luminaries and statesmen inaugurated and graced the All India Industrial Exhibition, including, Sir C.Rajagopalachari, Governor General; Dr.Rajendra Prasad, President of India; Dr.S.Radha Krishnan, President of India; Shri Jawaharlal Nehru, Prime Minister of India; Dr.V.V.Giri, Vice President of India; Shri Khan Abdul Gaffer Khan, Frontier Gandhi; Dr.Zakir Hussain, Vice President of India; Dr.Fakruddin Ali Ahmed, Vice President of India; Dr.N.Sanjeev Reddy, Chief Minister of Andhra Pradesh; Shri Lal Bahadur Shastri, Union Minister of Industries; Smt.Indira Gandhi, Prime Minister of India; Shri Morarji Desai, Union Minister for Finance; Shri Rajiv Gandhi, Prime Minister of India; Dr. Shankar Dayal Sharma, Governor of Andhra Pradesh; Shri.P.V.Narashima Rao, Chief Minister of Andhra Pradesh; Sri K.Chandrasekhar Rao, Chief Minister of Telangana; and many other Central Ministers and Chief Ministers from different States.

The Exhibition Society has been making a big impact and contributions in the state and country through its various activities, such as:

- Generating significant income for the Government since its inception by way of GST, Trade License Fees, Property Tax, Utility Charges, etc.
- Providing employment to about 2,000 teaching and non-teaching staff (impacting about 10,000 persons) through the educational institutions sponsored and managed jointly with OGA.
- Provide direct and in-direct employment every year to about 10,000 persons.
- Providing opportunity to about 1,000 enterprises (mostly small & medium scale) to market their products and earn income to sustain for rest of the year.

Sri K.Chandrasekhar Rao Garu, Hon'ble Chief Minister inaugurated the All India Industrial Exhibition in 2015 and 2016. Keeping in mind the stupendous work being done by the Exhibition Society and OGA, the Hon'ble Chief Minister assured to give additional land to the Exhibition Society in other locations for establishing more educational institutions.

With continuous and generous support from the Government, general public and sustained and unstinted cooperation and spirit of dedication from our Hon'ble Members, the Exhibition Society is confident of reaching new heights of excellence in service of the needy.

ABOUT SNVPMV

The Exhibition Society and Osmania Graduates Association (OGA) are jointly sponsoring and managing 20 institutions spread across Telangana, providing quality and affordable education to about 30,000 students.

SNVPMV is one amongst these institutions, established and managed by the Exhibition Society in AY 1997-98 and is approved by the Pharmacy Council of India (PCI) and affiliated to Osmania University. The B. Pharmacy course is accredited by the NBA. We impart world class education in the core and frontier areas of pharmacy in a modern, corporate-style building with excellent Ambience with a total built- up area of 1,00,000 sq. ft. consisting of state-of-the-art facilities. In addition to the statutory infra-structural requirement, we have provided High Tech Computer Labs, Animal House, Virtual Pharmacy, Air Conditioning of E-Class Rooms, Auditorium & Seminar Hall, Library, Staff Rooms and Hostel. Our strength includes highly qualified, experienced research-oriented Faculty, who are committed in graduating future pharma professionals. The courses offered include B. Pharmacy (100 intake), Pharm.D (30 intake), Pharm.D PB (10 intake) and M.Pharmacy in 5 branches- Pharmaceutics, Pharm. Analysis, Pharm. Quality Assurance, Regulatory Affairs and Pharmacology. We do have our own R&D facility to perform various Research Projects at the Academic Level in coordination with reputed Indian Pharma MNC's with whom we have MOU's. We do provide all round development of our students not only in Academics but also involve them in various Outreach activities. Our Alumni have excelled in every facet of Pharmacy profession in India and Abroad. Commemorating our Silver Jubilee Celebrations this year, apart from other activities we are organizing a three day Indo-US Summit 2024: "INNOVATIONS IN PHARMA EDUCATION, R&D, REGULATORY, MARKETING & PHARMACY PRACTICE" from 5th June to 7th June 2024 at Hyderabad, India.

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Members

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Mr. G. Dhanraj

Mr. S. Nagaraj

Mr. P. Shiva Kumar

Mr. Krishna

LIST OF STUDENT VOLUNTEERS

S.No	NAME	Course	Year
	REGISTRATION COMMITTEE		
1	M. Spandana Brighty (Incharge)	Pharm.D	V year
2	K. Meghana (Cr) (Incharge)	B. Pharmacy	III year
3	S. Nikitha	Pharm.D	V year
4	M. Anee Angeleena	Pharm.D	V year
5	A. Amulya	Pharm.D	IV year
6	G. Pallavi(35)	B. Pharmacy	III year
7	Rafya Sultana	B. Pharmacy	III year
8	K. Meghana	B. Pharmacy	III year
9	B. Likhitha	B. Pharmacy	III year
10	A.V.Vasanthi	B. Pharmacy	II year
11	B. Medha gayatri	B. Pharmacy	II year
12	G. Nitiashwarya	B. Pharmacy	II year
13	R. Sharanya (Incharge)	M. Pharmacy	I year
14	S. Deepthi (Incharge)	M. Pharmacy	I year
15	P. Pooja (Incharge)	M.Pharm (Analysis)	I year
16	Poojitha	B. Pharmacy	III year
	RECEPTION COMMITTEE		
1	Kurapati Sravya sree (Incharge)	B. Pharmacy	III year
2	Appanna Keerthi	B. Pharmacy	III year
3	Puli Uha Nandini	B. Pharmacy	III year
4	Nethi Bhavya	B. Pharmacy	III year
5	Vuyyuru Deekshitha Ramani	B. Pharmacy	III year
6	Mali Anjali	B. Pharmacy	III year
7	Are Vardhini	B. Pharmacy	III year
8	Dhornala Keerthi	B. Pharmacy	III year
9	Bandaru sai Deevena	B. Pharmacy	III year

S.No	NAME	Course	Year
	SCIENTIFIC COMMITTEE		
1	ChiduralaSweeya	B. Pharmacy	III year
2	Nomitha Medha Byreddy	B. Pharmacy	III year
3	Kotha Dhana shree	B. Pharmacy	III year
4	Nella Praharshitha	B. Pharmacy	II year
5	M.Rakshitha	Pharm-D	III year
6	Aastha singh	B. Pharmacy	III year
7	Meghana Dhulipala	Pharm.D	1st year
8	Etaboina Laxmi	Pharm.D	3rd year
9	B. Oormila Preethu	Pharm.D	3rd year
10	T. Rishika	Pharm.D	3rd year
11	LippisreePattala	Pharm.D	3rd year
12	J. Shravani	Pharm.D	3rd year
13	K. Mahathi jyothirmaye (Incharge)	M. Pharm	1st year
14	K.Jeevana	B. Pharmacy	III year
15	Amena Kausar	B. Pharmacy	III year
16	K.Lakshmi bhavana	B. Pharmacy	III year
17	Madhyalla Reva Pooja	Pharm.D	1st year
18	G. Bhanu sri	B. Pharmacy	III year
19	Ummalaneni Bhargavi	B. Pharmacy	III year
20	P.Shivapriya	B. Pharmacy	III year
21	B.Sindhu	Pharm.D	3rd year
22	B.Maheshwari	Pharm.D	1st year
23	T.Nishitha	Pharm.D	3rd year
24	B. Anjali (incharge)	M.Pharm Anlysis	
	STAGE MANAGEMENT COMMITTEE		
1.	K.Saathvekha	B.Pharmacy	3rd year
2.	Saistutee panda	B.Pharmacy	3rd year
3.	Shravya jogiparthi	B.Pharmacy	3rd year
4.	Sobiya begum	B.Pharmacy	3rd year
5.	Sparsh kumar	B.Pharmacy	3rd year
6.	Abhigna jakkula	B.Pharmacy	3rd year
7.	Nethikar sai Keerthi	B.Pharmacy	2nd year

S.No	NAME	Course	Year
8.	V.Madhuhasinireddy	Pharm.D	5th year
9.	Nameera khatoon	Pharm.D	4th year
10.	Sidra najam	Pharm.D	4th year
11.	Siddra tabassum	Pharm.D	4th year
12.	Ayesha Fatima	Pharm.D	4th year
13.	Kolan manisha	Pharm.D	5th year
14.	Kanapuram Nikhitha	B.Pharm	3rd year
SOUVENIR COMMITTEE			
1	Syeda Nudrath fatima	B.Pharmacy	3rd year
2	Sana khatun	B.Pharmacy	3rd year
3	Bachu.Neha Sri	B.Pharmacy	3rd year
4	Y. Sonia	Pharm.D	4th year
5	Dabbeta Sri vidhyadhari	Pharm.D	2nd year
6	Pallagani Likitha	Pharm.D	2nd year
7	Shreya Rudra	Pharm.D	3rd year
REPORT WRITING AND PRESS RELEASE COMMITTEE			
1	Ruqsar begum	PharmD	4th year
2	Niloufer Begum (Incharge)	M.Pharm(Ceutics)	1st sem
3	Humera Shoheb	PharmD	4th year
4	Sumayya	PharmD	1st year
5	Nagireddy.Amyuktha	PharmD	1st year
6	Nabiha Fatima	PharmD	1st year
7	Mulamalla Kavya	Bpharm	3rd year
8	Vemula Mythri	PharmD	2nd year
9	Shaine Abhinaya .P	PharmD	2nd year
10	Srujana Nalleda	PharmD	2nd year

S.No	NAME	Course	Year
	CULTURAL COMMITTEE		
1	K. Sri vaishnavi(Incharge)	B.Pharm	3rd year
2	P.Deekshitha(Incharge)	Pharm.D	4th year
3	Miriyala Neha (Incharge)	Pharm.D	3rd year
4	G.Tejashree	Pharm.D	3 rd year
5	Sai Priya	B.Pharm	2nd year
6	P.Ruchitha	B.Pharm	3rd year
7	V.Nikitha	B.Pharm	3rd year
8	Rishitha Nagulapalli	B.Pharm	3rd year
9	P.S.Swetha	Pharm.D	4th year
10	Vaishali Suragalla	PharmD	5th year
11	J.Manisha	Pharm.D	5th year
12	N.Shailaja	Pharm.D	3 rd year
13	G.Sangeetha	B.Pharm	3rd year
14	Allikanti Bhumika	B.Pharm	3rd year
15	Vemula Mythri	Pharm.D	2nd year
16	S. Jyothirmai Bai	B.Pharm	2nd year
17	Nalleda Srujana	Pharm.D	2nd year
18	G.Rushitha	B.Pharm	2nd year
19	K. Srivani	B.Pharm	2nd year
20	K.Gowthami	B.Pharm	2nd year
21	K.Bhuvaneshwari	Pharm.D	5th year
	HOSPITALITY COMMITTEE		
1.	Kaveri Jada	Pharm.D	5th year
2.	Jyothsna Pillalamarri	Pharm.D	5th year
3.	N. Amali	B.Pharmacy	3rd year
4.	D. Nikitha	B.Pharmacy	3rd year
5.	B. Sai Akanksha	B.Pharmacy	3rd year1

S.No	NAME	Course	Year
ALUMNI COMMITTEE			
1	Dasari Sai Vandhana	B.Pharmacy	3rd year
2	Gudimetta Radhika	B.Pharmacy	3rd year
3	Thakur Aarthi	Pharm.D	2nd Year
4	Dudhi Lavanya	Pharm.D	2nd Year
TRANSPORT & ACCOMMODATION COMMITTEE			
1	Afsha Tabassum	Pharm.D	5th year
2	Misbha Fathima	Pharm.D	5th year
3	Hana Mariam Khan	Pharm.D	5th year
4	Gauri Diggikar	Pharm.D	5th year
5	Akanksha Kathikar	Pharm.D	5th year
HALL MANAGEMENT COMMITTEE			
1	S. Divya(Incharge)	Pharm.D	5th year
2	M. Vandana(cr)(Incharge)	B Pharmacy	3rd year
3	P. Sharvani	Pharm.D	5th year
4	A. Sahaja	Pharm.D	5th year
5	N. Lohitha Lakshmi	B Pharmacy	3rd year
6	A. Shivani	B Pharmacy	3rd year
7	M. Kavya	B Pharmacy	3rd year
8	A. Kavya	B Pharmacy	3rd year
9	A. Maheshwari	B Pharmacy	3rd year
10	E. Bhavani	B Pharmacy	3rd year
11	M.Vasundhara	B Pharmacy	3rd year
12	S. Divya	B Pharmacy	3rd year
13	P. Divya	B Pharmacy	3rd year
14	K.V.V. Lakshmi shivani	B Pharmacy	3rd year
15	T. Manasa	B Pharmacy	3rd year
16	G. Pallavi	B Pharmacy	3rd year

S.No	NAME	Course	Year
	SPORTS COMMITTEE		
1	Kandela.Chandana(Incharge)	Pharm.D	3rd year
2	Ganji.Gnana Prasanna(Incharge)	B.Pharm	3rd year
3	Gonela.Raveena Gayathri	B.Pharm	3rd year
4	Ganji.Lakshmi	Pharm.D	3rd year
5	Guguloth.Pavani	Pharm.D	3rd year
6	Shreshta	Pharm.D	3rd year
7	Bathula.Yashaswi	Pharm.D	2nd year
8	Nellutla.Sri Vaishnavi	Pharm.D	2nd year
9	M.Rishika Reddy	Pharm.D	1st year
10	Thudimilla.Madhuri	Pharm.D	1st year
11	M.Manogna	Pharm.D	1st year
12	Kuntala.Manisha	B.Pharm	1st year
	VALEDICTORY COMMITTEE		
1	Gambo Nikitha	B.Pharm	4th year
2	Geetanjali Rout	B.Pharm	4th year
3	A.Jayasree	B.Pharm	4th year
4	Lohale Shravani	B.Pharm	4th year
5	K.Sai Sree	B.Pharm	4th year
6	P.Kusumanjana	B.Pharm	4th year
7	K. Naveena	B.Pharm	4th year
8	Subedar Bhavani	B.Pharm	4th year

PROGRAM SCHEDULE - DAY 1

Wednesday, 5th June 2024

Time	Programme
9.00 A.M. to 10:00 A.M.	Registration / High Tea
10.00 A.M. to 11:30 A.M.	Inaugural Function

SESSION-1

Time	Distinguished Speaker	Topic
11:30 A.M. to 1:00 P.M.	**Dr. Mansoor A. Khan** Interim Dean, University Distinguished Professor, Regents Professor, Presidential Impact Fellow, Texas A&M University School of Pharmacy, College Station, Texas, USA, Ex-Division Director, US Food and Drug Administration (US FDA)	"Role of Academics to help set Standards for Complex Generics"

Chairperson:	**Prof. D. Rambhau,** Director-Innovation & Scientific Affairs, Pulse Pharmaceuticals, Hitech City, Madhapur, Hyderabad.	**Co-Chairperson:**	**Prof. G. Achaiah,** Retd.Professor, UCSPc, Kakatiya University, Warangal

1:00 P.M. to 1:45 P.M.	Lunch Break

SESSION-2

Time	Distinguished Speaker	Topic
1:45 P.M. to 3:15 P.M.	**Dr. D. Samba Reddy** Regents Professor & Director, Texas A&M University School of Medicine, Bryan, Texas, USA	"Discovering New Drugs: From bench to US FDA approval"

Chairperson:	**Prof.V.Malla Reddy,** Emeritus Professor, UCPSc, KU & Former Director–Technical,Symed Laboratories Ltd., Hyderabad	**Co-Chairperson:**	**Dr.Arutla Srinivas,** CEO, Zenara Pharma Pvt Ltd

3:15 P.M. to 3:45 P.M.	Tea Break

SESSION-3

3:45 P.M. to 6:30 P.M.	Scientific Oral & Poster Presentations (CQR & ACB)

PROGRAM SCHEDULE - DAY 2

Thursday, 6th June 2024

SESSION-4

Time	Distinguished Speaker	Topic
10:00 A.M. to 11:30 A.M.	**Dr. Rajender Aparasu** Professor & Department Head University of Houston College of Pharmacy, Houston, Texas, USA	"Safety Profile of Antimuscarinics in Older Adults with Dementia"

Chairperson:	**Dr.K.Satyanarayana**, Former VP: R&D, Natco Pharma Ltd, Hyderabad	**Co-Chairperson:**	**Dr Lingaiah Nagarapu**, Chief Scientist & Professor, CSIR, IICT, Hyderabad

SESSION-5

Time	Distinguished Speaker	Topic
11:30 A.M. to 1:00 P.M.	**Dr. Indra K Reddy** Interim Chief Operating Officer and Senior Vice-President, Texas A&M University Health Science Center, Bryan, Texas, USA	"Rx for Success: Motivating Pharmacy Students to Aim Higher"

Chairperson:	**Dr.P.V.Appaji**, Former Director General Pharmexcil, Advisor BDMA	**Co-Chairperson:**	**Dr.V.Venkateshwarlu**, Managing Director, NEUHEIT Pharma Ltd

1:00 P.M. to 1:45 P.M. **Lunch Break**

SESSION-6

Time	Distinguished Speaker	Topic
1:45 P.M. to 3.00 P.M.	**Mr. Sudhakar Paul** President & CEO, PTS Labs, Lenaxa, KS,USA	"Research & Development to Prescription (R&D to Rx) - Business Perspective"

Chairperson:	**Mr.Ramakrishnan**, Former Director, Srikrishna Pharmaceutical Ltd.,	**Co-Chairperson:**	**Mr. S.B.M.P.Halakatti**, Chief Quality Officer, Formulation Division

SESSION-7

Time	Distinguished Speaker	Topic
3.00 P.M. to 4:15 P.M.	**Ms. Suman Shanker** Senior Scientist (Retd.), Pfizer Inc, Groton, CT, USA.	"Discovery of New Medicines Enabled by Structural Biology: Case Studies"

Chairperson:	**Prof.V.Kishan**, Former Professor, Department of Pharmaceutical Biotechnology, UCPSc, Kakatiya University, Warangal	**Co-Chairperson:**	**Dr.V.Ramesh Kumar**, Chairperson, BOS-Pharmacy (B.Pharm & M.Pharm)

4.15 P.M. to 4.30 P.M. **Tea Break**

SESSION-8

4:30 P.M. to 6:30 P.M. **Scientific Oral & Poster Presentations (PPC & CPB)**

PROGRAM SCHEDULE - DAY 3

Friday, 7th June 2024

SESSION-9

Time	Distinguished Speaker	Topic
10:00 A.M. to 11:00 A.M.	**Prof. U. Vindhya** Former Professor of Psychology & Deputy Director, Tata Institute of Social Sciences, Hyderabad Campus	"Work-Family Balance: Is it an issue for Women only?"

Chairperson:	**Prof.B.Sunitha Reddy**, Professor & Principal, UCPSc, JNTUH, Sultanpur	**Co-Chairperson:**	**Ms.Sanghimitra Dalal,** Head New Product Launches, Dr.Reddy's Laboratories, Hyderabad

SESSION-10

Time	Distinguished Speaker	Topic
11:00 A.M. To 12:30 P.M.	**Sri J. P. Naidu** Management Consultant and Career Guidance Coach, Pune	"You are a Product- How value addition will help stand out from the crowd"

Chairperson:	**Dr.Ch.Sailu**, Principal, University College of Technology, Osmania University	**Co-Chairpersons:**	**Dr V. Venkata Basava Rao,** Dean, OU, Hyderabad. **Dr.S.Srinu Naik,** Chairperson, BOS-Pharm.D, OU, Hyderabad

SESSION-11

Time	Distinguished Speaker	Topic
12:30 P.M. to 1:30 P.M.	**Sri Shekhar Mandrekar** President & Board Director, M. J. Biopharm Pvt. Ltd., Mumbai	"Changing Paradigm in Pharmaceutical Industry"

Chairperson:	**Sri JNM Rao**, Former Vice President, Supply Chain and Special Projects, Aurobindo Pharma, USA	**Co-Chairperson:**	**Mr. Kannan. I,** General Manager Marketing- Emerging Markets, MSN Laboratories Pvt Ltd, Hyderabad.

1:30 P.M. to 2:15 P.M. **Lunch Break**

SESSION-12

Time	Distinguished Speaker	Topic
2:15 P.M. to 3:30 P.M.	**Prof. V.P. Singh** Professor of Medicine, Department of Medicine, Bharati Vidyapeeth Deemed to be University, Medical College, Pune	"The Changing profile of the Physician and Pharmacist: The Emerging interface between them"

Chairperson:	**Dr. B. Dinesh Kumar**, Former Scientist G- Director Grade ICMR, - National Institute of Nutrition, Hyd	**Co-Chairperson:**	**Prof. M. Venkata Ramana,** Executive Committee Member-PCI, New Delhi

3.30 P.M. to 4.00 P.M. **Tea Break**

SESSION-13

4.00 P.M. to 6:30 P.M. **Pharmacy Inter Collegiate Dance Competitions**

Invitation

SAROJINI NAIDU VANITA PHARMACY MAHA VIDYALAYA

(Sponsored by the Exhibition Society) Approved by PCI, Affiliated to Osmania University

NBA Accredited B. Pharmacy Course

Commemorating Silver Jubilee Celebrations

You are cordially invited to grace the Inaugural Function of

SNVPMV SILVER JUBILEE CELEBRATIONS
&
INDO-US SUMMIT – 2024

Theme: **"Innovations in Pharma Education, R&D, Regulatory, Marketing & Pharmacy Practice"**

on Wednesday, 5th June 2024, 10.00 am at Tagore Auditorium, Osmania University Campus, Hyderabad.

Chief Guest

Prof. R. Limbadri
Prof. of Public Administration, Osmania University
Chairman, Telangana State Council of Higher Education (TSCHE)

Guests of Honour

Sri Venkat Jasti
Chairman & CEO,
Suven Life Sciences Ltd, Hyderabad

Sri Ravi Uday Bhaskar
Director General
Pharmexcil, Hyderabad

Prof. Lakshmi Narayana
Registrar
Osmania University, Hyderabad.

Dr. C. Bharat Reddy
Executive Director
MSN Labs Ltd., Hyderabad

Sri Ramdhan
Deputy Director
Drugs Control Administration,
Govt. of Telangana

Dr. Mansoor A. Khan
Interim Dean, Distinguished Professor,
Texas A&M University School of Pharmacy
& Ex-Division Director, US FDA

Dr. A. Ramkishan
Deputy Drugs Controller of India CDSCO,
Zonal Office, Hyderabad.

Sri R.K. Agarwal
National President
Bulk Drug Manufacturers Association, India

Dr. A. Kalyan Chakravarthy
Senior Vice-President - PSAI
Dr. Reddy's Laboratories Ltd, Hyderabad

Sri J. Rajamouli
President
Indian Drugs Manufacturers Association,
Telangana State Branch

Presided by

Dr. B. Prabha Shankar
Chairman, SNVPMV &
President, IPA Telangana State Branch,
CMD- Leads Pharma Pvt Ltd

Prof. K. Sirisha
Vice Principal

Prof. T. Mamatha
Principal

Prof. N. Srinivas
Director

Sri V. Sainath Dayaker Shastri
Hon. Secretary

INVITED LECTURES

Dr. Mansoor A. Khan

Interim Dean, University Distinguished Professor, Regents Professor, Presidential Impact Fellow, Texas A&M University School of Pharmacy, College Station, Texas, USA, Ex-Division Director, US Food and Drug Administration (US FDA)

Dr. Mansoor A. Khan serves as the Interim Dean since August of 2023. Prior to that he was Vice Dean in the same institution for eight years. He also served the US FDA for over 11 years as a Division Director and Senior Biomedical Research Scientist. Dr. Khan is a licensed pharmacist and has obtained his Ph.D. degree in Pharmaceutics from the St. Johns University College of Pharmacy in New York. Prior to his USA education, he obtained his B.Pharm from Kakatiya University in Warangal and M.Pharm in Pharmaceutical Technology from Andhra University, Vizag. His early academic positions with increasing ranks upto a tenured full professor have been in University of Louisiana at Monroe and Texas Tech Universities.

Dr. Khan's research interests are in Drug Delivery and Formulation Science, particularly in regulatory science of pediatric therapeutics, complex generics, and Quality by Design with Process Analytical Technologies. His research is currently supported by the NIH, FDA, Pharma Industry and the State of Texas. Most recently, Dr. Khan's research with NIH grants led to the development of compounded dose-flexible pediatric dosage forms with 3D printing. Further, Dr. Khan developed procedures to show how bioequivalence studies are done for complex generics by in vitro studies when human studies are not practical. This paved the way for development of policies for first-approvals of several complex generics in the US FDA.

Dr. Khan received the AAPS Lifetime Award of 2023 Distinguished Pharmaceutical Scientist for pre-eminence in Pharmaceutical Sciences, 2023 NIPTE Distinguished Pharmaceutical Scientist Award in Pharmaceutical Processing, and the 2023 Ralph Shangraw Memorial International Award from the IPEC Council for his research on excipients. Dr. Khan also received over a dozen FDA Research Achievement Awards. Dr. Khan is among the world's top 2% most cited scientists. He has published over 350 peer-reviewed manuscripts, 35 book chapters and five books including Quality by Design for Biopharmaceutical Product Development and Pharmaceutical and Clinical Calculations. He has been cited over 20,000 times. He has delivered over 300 invited presentations world-wide.

While at FDA, Dr. Khan has helped develop regulatory policies for reviews and compliance, and led the chemistry and manufacturing control (cmc) review and research teams on drug delivery systems, product stability, biotech products, and biopharmaceutics. As a formulations expert, Dr. Khan served as a FDA representative to EMA (European Medical Agency), WHO, USP, NIH, DoD, DARPA, NASA, and Bill and Melinda Gates Foundation. He also served as the science policy advisor to CDER Center Director where he helped resolve complex issues of drug reviews and compliance with science. He led the FDA chemistry review team that approved the first 3D printed tablet product in August 2015.

"Role of Academics to help set Standards for Complex Generics."

Abstract: Generic products are approved by the determination of sameness with reference listed products with respect to pharmaceutical equivalence, bioequivalence, labelling and production capability via a pre-approval inspection. This works well for a majority of products. However there are exceptions that require new knowledge and policies specific to a product or group of products. Topically acting drugs represents a good example. They may or may not get absorbed in the systemic circulation for pharmacokinetic measurements, and when they get absorbed, they may get converted to metabolites very quickly. These scenarios create difficulty in evaluating bioequivalence, when the latter is defined in 21CFR320.1 as "absence of a significant difference in the rate and extent to which the active ingredient or active moiety in pharmaceutical equivalents or pharmaceutical alternatives becomes available at the site of drug action when administered at the same molar dose under similar conditions in an appropriately designed study. Product development of complex locally acting drugs require a thorough understanding and evaluation for regulatory success. Too often , the position of innovator firms is different from generic firms. Those differences need to be resolved with science-based policy decisions. The present seminar will provide the background information for policy development in FDA with a few case studies.

Dr. D. Samba Reddy

Regents Professor, Neuroscience and Experimental Therapeutics
Director, Texas A&M Institute of Pharmacology and Neurotherapeutics
Texas A&M University School of Medicine, Bryan, TX 77807

Dr. Mansoor A. Khan serves as the Interim Dean since August of 2023. Prior to that he was Vice Dean in the same institution for eight years. He also served the US FDA for over 11 years as a Division Director and Senior Biomedical Research Scientist. Dr. Khan is a licensed pharmacist and has obtained his Ph.D. degree in Pharmaceutics from the St. Johns University College of Pharmacy in New York. Prior to his USA education, he obtained his B.Pharm from Kakatiya University in Warangal and M.Pharm in Pharmaceutical Technology from Andhra University, Vizag. His early academic positions with increasing ranks upto a tenured full professor have been in University of Louisiana at Monroe and Texas Tech Universities.

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"Discovering New Drugs: From Bench to US FDA Approval"

Abstract: New drug discovery and development is a complex and tedious process with high risks and rewards. In this talk, Dr. Reddy explores the intricate landscape of new drug discovery and development, focusing on the challenges and prospects associated with FDA approval, particularly in the realm of brain medicines. His pioneering work unveils a revolutionary neurosteroid platform, crafted to unlock novel molecules for brain disorders. Neurosteroids, a class of naturally occurring steroid molecules, emerge as compelling therapeutic agents for neurological disorders, leveraging their robust capacity to regulate neuronal excitability and confer neuroprotection. Over a span of 25 years, Dr. Reddy has significantly advanced our understanding of the mechanistic functions of neurosteroids in the brain. This journey has unraveled critical insights into extrasynaptic GABA-receptor—neurosteroid interactions. Notably, his groundbreaking research has led to the identification of the neurocode for treating epilepsy and the invention of "neurosteroid replacement therapy" for conditions such as premenstrual syndrome and post-partum depression. The pinnacle of these achievements manifests in the FDA approval of two groundbreaking medicines: Brexanolone (allopregnanolone) for post-partum depression in 2019 and Ganaxolone for seizures in pediatric epilepsy in 2022. These products are making significant strides in improving global healthcare. A new anticonvulsant product from his lab is currently in Phase 3 trials for status epilepticus. But the pursuit continues. Challenges such as poor bioavailability and formulation delivery hurdles persist, inspiring Dr. Reddy and his team to engineer "second-generation" neurosteroids with improved properties. This opens doors to potent treatments for chronic brain disorders and neurodegeneration, offering hope for millions worldwide. Welcome to a talk that promises to rewrite the future of brain health.

Dr. Rajender Aparasu Ph.D,FAPhA
Mustafa and Sanober Lokhandwala Endowed Professor
Chair, Department of Pharmaceutical Health Outcomes and Policy
Director, Population Health Outcomes and Pharmacoepidemiology Education and Research Center (P-HOPER Center)
College of Pharmacy, University of Houston, Texas, USA

Dr. Rajender R. Aparasu is an Endowed Professor and Founding Chair of Pharmaceutical Health Outcomes and Policy at the University of Houston - College of Pharmacy. He is a renowned scholar and educational leader with over 25 years of experience in pharmaceutical outcomes research and policy. His primary areas of research interest include outcomes research and pharmacoepidemiology, with particular emphasis on improving geriatric quality of care. His research group has focused on evaluating medication safety in older adults with the goal of generating real-world evidence based on novel methodological approaches for causal inference in observational research. He had continuous research funding from Federal sources, including R01, R13, R15, R56, and R03, to generate real-world evidence. He has published over 180 peer-reviewed manuscripts and has given over 300 presentations at national and international meetings. He was listed on the World's Top 2% Scientists in 2020, 2021, & 2022 based on various citation metrics in his area as per PLOS Biology. He is the Editor-in-Chief for Drug, Healthcare, and Patient Safety (Taylor & Francis). He has edited three textbooks, Research Methods for Pharmaceutical Practice and Policy (Pharmaceutical Press), Principles of Research Design and Drug Literature Evaluation (McGraw Hill), and Student Handbook for Pharmacy Practice Research (McGraw Hill). He is a grant reviewer for the National Institutes of Health and served on the Disease Control and Prevention- National Center for Health Statistics Board of Scientific Counselors Workgroup. In 2012, he was recognized as a Fellow of the American Pharmacists Association (FAPhA) for his exemplary service and contribution to the pharmacy profession. He is a Fulbright Specialist and has visited Indonesia and other countries. In 2022, he was honored by the American Association of Colleges of Pharmacy (AACP) as the recipient of the Paul R. Dawson Award for Excellence in Patient Care Research. In 2024, the American Pharmacists Association (APhA) bestowed him with the APhA Academy Of Pharmaceutical Research & Science (APhA-APRS) Research Achievement Award for his outstanding and meritorious achievements in pharmaceutical sciences.

"Safety Profile of Antimuscarinics in Older Adults with Dementia"

Abstract: Dementia and Overactive Bladder (OAB) are some of the most common comorbid conditions affecting older patients. The pharmacological management of OAB involves the use of antimuscarinic drugs. Although antimuscarinics are effective, their safety and tolerability profiles vary due to differing selectivity for muscarinic receptor subtypes. Some of the antimuscarinics like oxybutynin, tolterodine, trospium, fesoterodine are non-selective as they have affinity for all muscarinic receptors, and others like darifenacin and solifenacin are selective due to their high affinity for M2/M3 receptors that are responsible for bladder contraction. Central adverse effects of antimuscarinics are a significant concern in dementia patients as these patients suffer from progressive cognitive decline due to damage to the cholinergic neuron system, and antimuscarinics can worsen the disease state and can adversely affect patient outcomes. Therefore, non-selective antimuscarinics can significantly increase medication-related morbidity and mortality due to their central adverse effects. This presentation will discuss the findings of population-based research to evaluate adverse outcomes of antimuscarinics in patients with dementia and OAB. Specifically, the study findings regarding the risk of falls/fractures, all-cause hospitalization, and all-cause mortality due to antimuscarinic use among older dementia patients with OAB will be shared. The study findings can have significant clinical and policy implications for safe medication practices in patients with dementia, as comparative safety evidence can be valuable in managing older patients with complex and comorbid conditions.

Dr. Indra K Reddy

Interim Chief Operating Officer and Senior Vice-President,
Texas A&M University Health Science Center,
Bryan, Texas, USA

Dr. Reddy received his Ph.D in Pharmaceutical Sciences from University of Florida (UF) in Gainesville. His post-doctoral training was conducted at UF's Center for Drug Design and Delivery. He completed two Harvard Institutes for Higher Education programs–Management and Leadership in Education and Management Development. He is a Fellow of the American Association of Pharmaceutical Scientists and American Pharmacists Association.

Dr. Reddy has performed innovative work in the areas of ophthalmic and transdermal drug design, development, and delivery. He has authored/co-authored six textbooks; written 13 book chapters; edited two reference books; and published over 120 research and review articles. He serves on editorial boards for five international pharmacy journals and as reviewer for more than 12 scientific/pharmacy journals.

Dr. Reddy has received numerous awards, including Teacher of the Year at St. John's University and Best Teacher of the Year and Outstanding Professor at University of Louisiana at Monroe. He was named the Outstanding Pharmacy Alumnus at UF and received the American Pharmacists Association Research Achievement Award.

Dr. Reddy served as Founding Dean of the Texas A&M Irma Lerma Rangel School of Pharmacy from 2004 to 2023; he currently serves as Chair of the National Institute of Pharmaceutical Technology and Education Board of Directors and as a member on the Executive Board of the Global Institute of Hispanic Health.

"Rx for Success: Motivating Pharmacy Students to Aim Higher"

Abstract: In the bustling corridors of pharmacy education, amidst towering shelves of knowledge and the intricate formulations of science, lies a transformative journey awaiting every aspiring pharmacist. This presentation serves as a beacon, illuminating the path ahead and igniting the flames of passion, purpose, and perseverance within each student, compelling them to think, reflect, and aspire to new heights in their pursuit of excellence.

Passion, the fiery force that fuels the heart, has the power to transform the mundane into the magnificent. Purpose, the compass of the soul, steers actions towards alignment with values and aspirations. Perseverance, the bedrock of resilience, changes obstacles into steppingstones on the path to triumph. These three pillars intertwine, forming an unshakable foundation upon which dreams are not just envisioned but fully realized—dreams delivered.

Dream boldly, for within the vast expanse of our aspirations lies boundless potential, awaiting the spark of determination to set it ablaze. Pursue your dreams with unwavering dedication, viewing challenges not as roadblocks but as opportunities for profound growth. Maintain a positive outlook amidst the trials and tribulations, for optimism breeds resilience, and resilience paves the path to unparalleled success.

As you embark on this collective journey, I ask that you embrace the ethos of passion, purpose, and perseverance as guiding stars lighting our way. I implore you to dream audaciously, to strive relentlessly, and to inspire others through your unwavering commitment. For within the vast tapestry of pharmacy, as in the grandeur of life itself, the prescription for success resides within each of you.

This presentation imparts essential skills and attributes, equipping you to aim higher, achieve more, and make an indelible difference in the world of pharmacy and beyond.

Mr. Sudhakar Paul
President & CEO, PTS Labs, Lenaxa, KS,USA

Mr. Sudhakar Paul, Owner/President/CEO of PTS Consulting, LLC and PTS Pharma Labs, has over 35 years of experience in the pharmaceutical and related industries. He has been actively involved in management and product development activities including development support activities but not limited to, preclinical, clinical, bioequivalence studies, chemistry & manufacturing controls and filing/approval of drug applications. Mr.Paul has held various positions in FDA regulated operations for over 30 years including President/CEO for a multinational pharmaceutical operation for 14 years. He is currently serving as management consultant to various Pharma and biotech operations, Kansas University Medical Center and Midwest Stem Cell Treatment Center, for device firms Biomedical Devices of Kansas, Arctic Fox in Boston, American Screening Corporation of Louisiana and Cure Pharmaceuticals Inc in Oxnard, CA. Mr.Sudhakar is scientific director for OWP Pharmaceuticals and Scientific Consultant to various other companies globally and also has partnership interest in various US pharmaceutical firms. He is also a senior specialist for Lachman consulting services providing regulatory and compliance guidance in various aspects of the pharmaceutical industry.

Mr.Sudhakar holds an MS(Pharm.) degree from ICT, Mumbai and an MBA from Andrews University, Michigan and Kansas State University, Kansas. He has extensive pharmaceutical experience combined with excellent entrepreneurial and administrative skills necessary for achieving organizational goals in a complex and competitive business environment. He has extensive knowledge of pharmaceutical regulations in USA, Canada and European Union, Asia and other countries. Mr. Sudhakar has detailed insight and understanding of the drug development and review process. He also has number of US patents related to formulation development and 505(b)(2) NDAs.

"Research & Development to Prescription (R&D to Rx)-Business Perspective"

Abstract: "The drug commercialization process for new drugs, generics, biological products, devices, and other pharmaceuticals - from concept to lab to market- is critical in bringing new pharmaceuticals to the global market. It involves a complex series of steps, from initial research and development to non-clinical, pre-clinical, clinical trials, regulatory filings review approval, and commercialization. For pharmaceutical companies, the commercialization process is critical not only for bringing new or generic drugs to market for the general good of the populations but also for ensuring the success and profitability of the company.

This presentation examines the drug commercialization process and explores the critical steps in bringing a new or generic drug to market. The discussion will also examine some of the challenges and opportunities faced by pharmaceutical companies during this process and discuss the vital role of the regulatory agencies, evolving regulations, public policy, and potential market competition in shaping the industry. Whether you are a healthcare professional, investor, or simply curious about the pharmaceutical industry, this discussion may provide valuable insights into the complex and fascinating world of drug commercialization as it pertains to:

- Anticipated lifetime and global revenue potential from new drugs and generics (including biosimilars)
- Drug development phases, technology transfer, scale-up and expected costs to develop a new drug, generics, biosimilars, devices.
- Challenges and opportunities, policies and programs that influence the supply of and demand for prescription drugs. (US public and market driven policies)."

Ms. Suman Shanker

Senior Scientist (Retd.), Pfizer Inc, Groton, CT, USA.

Ms.Suman Shanker is a Retired Senior Scientist from Pfizer Inc, Groton CT. She has over 33 years of experience in protein expression, purification, characterization and crystallization for the pursuit of new molecular biology targets for the design of novel drugs and vaccines.

After obtaining B. Pharm degree from Kakatiya University, over the past 3 decades her career has traversed through teaching, pharmaceutical manufacturing, development of pharmaceutical product quality assessments and pharmaceutical discovery research. Ms. Suman Shanker's experience in the pharmaceutical industry, especially in the expression, isolation, purification and detailed characterization of biomolecules was enabled through the coaching and mentoring by several highly knowledgeable colleagues. This mentoring enabled her to become an expert in these areas and provided opportunities to train young scientists, especially training women scientists to excel. Her responsibilities have spanned from being the project lead for a multi-billion-dollar commercial product to developing methods for novel reagents such as nanobodies and crystallization of target proteins for the first time in the world.

Ms.Shanker also collaborated with academic labs to facilitate advanced protein purification techniques. Working in the pharmaceutical industry enriched her scientific knowledge and provided her the opportunities to learn about public speaking and influencing others with the research work performed by her. She had an extraordinary opportunity to witness the journey of a concept of a biological target to treat a disease to designing a new drug molecule against that biological target.

"Discovery of New Medicines Enabled by Structural Biology: Case Studies"

Abstract: Interdisciplinary science underpins the discovery of all small molecule and biomolecule medicines that are designed to safely modulate disease. Drug discovery and development has evolved dramatically over recent decades, and the field continues to advance today as an in-depth understanding of molecular biology provides the fundamental basis for most diseases. More sophisticated approaches and models are continuously being developed, so are new technologies being incorporated into the entire pipeline of development, and exciting drug modalities continue to emerge. In the pharmaceutical industry, close collaboration between different scientific disciplines enables a multifaceted approach to the entire process of drug discovery and development.

Structural biology tools have become essential in accelerating drug discovery. Use of advanced experimental and computational techniques in structural biology provide fundamental understanding of the molecular biology based mechanism that necessitates to be down regulated or up regulated to modulate either the disease or its manifestations. The ability to gain insights through structural biology to reveal details of the interactions of ligands with the binding site of the disease related target biomolecule provides direct information to assist in the design of molecules that could potentially become medicines.

In this presentation a brief overview of the use of structure based drug design will be provided through three case studies. The case studies will provide examples of successful outcomes, work in progress and unanticipated challenges encountered in the discovery, design and development of new medicines.

CASE STUDY # 1: Story behind the discovery of Paxlovid: Nirmatrelvir + Ritnoavir Oral Treatment for COVID-19 Infections.

This story describes the demand and urgency that was addressed by systematic approach based upon the prior knowledge of anti-viral medicines, use of structural biology insights, innovative molecular design and unprecedented speed of drug development.

CASE STUDY # 2 Description of the development of structure-based design of a conformationally stabilized E. coli FimH vaccine candidate for Urinary Tract Infection (UTI).

This story describes the use of structural biology to gain understanding of the mechanism of biomolecules from bacteria that interact with the host cells which cause infection. Further it illustrates how this understanding is then utilized to design potent and safe molecules to prevent infection through the development of a vaccine.

CASE STUDY # 3 A short discussion with emphasis of the discovery path of a compound for inhibition of autoimmune diseases.

This story describes the prospects of a novel approach to treat auto-immune disease through deep understanding of not only the structural biology but also the utilization of exquisite chemical insights in designing inhibitors. Despite such efforts, the selected inhibitor molecule underwent attrition during preclinical testing.

Prof. U. Vindhya
Former Professor of Psychology & Deputy Director,
Tata Institute of Social Sciences, Hyderabad Campus

Prof. U. Vindhya, PhD was formerly with Tata Institute of Social Sciences, Hyderabad campus as its Deputy Director and Professor of Psychology. Earlier, she had worked in Andhra University, Visakhapatnam, and at the Centre for Economic and Social Studies, Hyderabad. She is presently a visiting faculty at the International Institute of Information Technology, Hyderabad. She is the recipient of several awards and fellowships including the South Asian Visiting Scholarship (Oxford University); Fulbright Visiting Lecturership (USA); and Visiting Professorships in Eotvos Lorand University, Hungary and University of Gothenburg, Sweden.

Her research interests are located in the interface of psychology and feminism and have focused on gender and mental health, violence against women, trafficking, feminist counselling, and the psychological dynamics of women's political activism. Her publications include Feminist Psychologies (Routledge, 2024) and the co-edited book Handbook of International Feminisms: Perspectives on Psychology, Women, Culture and Rights (Springer, New York) that won the 2012 Distinguished Publication Award from the Association for Women in Psychology (USA).

Prof. Vindhya has led several research projects sponsored by the World Bank, Gates Foundation, Plan India, Tata Trusts, ICRW, UGC and the ICSSR, amongst others. She was the first Project Director of the Sakhi One Stop Centres for gender-based violence, a project for which TISS Hyderabad is a knowledge partner with the Govt of Telangana, and that is operating in 33 districts of Telangana state.

She is an External member, Internal Committee (for POSH) for corporate, govt, and educational institutions. She regularly conducts training and capacity building programs in gender sensitization for educational institutions, police, industry, govt. organizations, NGOs, media and publishing houses.

"Work-family balance: Is it an issue for women only? Insights from recent research"

Abstract: Access to education and paid employment have been the two key features of women's progress and development in the past seven decades of post-independence India. This journey, although remarkable in many ways, has also been marred by the persistence of socio-cultural barriers that have resulted in huge gender gaps in both education and employment. A major barrier has been the societal perception that women's primary role is associated with the 'private' domain of home and domesticity, and hence the onus of balancing between the public role of formal employment and the private role of family is on women only. Recent research in feminist psychology and gender studies however, points to the inequities inherent in such a perception, and underscore the need for change in social attitudes as well as in state policies in order to translate women's right to work into effective practice. This presentation will focus on some insights from current research to argue that work-family balance is indeed not a women's issue only, but the responsibility of the state and society at large.

Sri J. P. Naidu
Management Consultant and
Career Guidance Coach, Pune

A management graduate, Jai Naidu, embarked on his corporate journey in 1976 and has over forty years of rich experience in Pharma, FMCG, Steel, and Education Industry in India and overseas markets having travelled extensively in all the five continents. He holds a BSc degree in Chemistry and Psychology and an MBA in Marketing and Human Resources. He is a Psychometric Test Administrator approved by the British Psychological Society and Psytech International UK. He has assessed a large number of students and corporate professionals to offer career guidance. As a career guidance expert, he is associated with Bodhbridge Educational Services Pvt. Ltd, Chennai.Based in Pune, he is an independent Management Consultant, Corporate Trainer, Career Guidance Expert and a Visiting Faculty. He has worked on employability of students with the objective to enhance their employability and competencies, by introducing development programs. To date he has conducted numerous programs benefiting over 60,000 students and 500 faculty members. He has 40 years of diverse experience in Sales & Marketing, in the Pharmaceuticals, FMCG, and Steel industries, across International Markets. He as broad global experience, having worked in 26 countries spread across five Continents. He held key leadership positions in various international organisations in UAE, Oman, Qatar, Bahrain and Saudi Arabia. He authored a book titled, "You Are A Product, published in September 2020 . He is passionate about people development and has conducted numerous training programs and seminars for corporates on merchandising, leadership, team-building, and customer management. He is passionate about the "Employability" of students and has conducted numerous seminars for students and faculty of Educational Institutions.

"You Are a Product- How Value Addition Will Help You Stand Out from The Crowd"

Abstract: Explanation of the Concept of Value Addition and why an individual is a Product. The importance of value addition to enhance employability and sustenance in a highly competitive business environment will be discussed in detail. The number of students passing out every year pan India will be informed to the students and the job opportunities available will be provided. Emphasis will be on the importance of soft skills required for effective job performance. The importance of self-assessments through psychometrics, for making informed career decisions, will be explained to the students. Moving up the ladder doesn't happen by chance or luck or influence. To some, it may, but to most, it is ensuing continuous "employability "by trying to figure out the factors that enable it. If one doesn't figure out the factors that propel career growth, the chance of remaining behind in the rat race is not a surprise. I may like to add here that survival in the corporate world is not only for oneself but also for others who are dependent on the salary earned. Parents, Siblings, wife, Children in most cases. The needs are dynamic and ever- growing and to satisfy them one starts to search for the key growth and higher income. Out of the many reasons the ones that were commonly voiced out were:

1. Professors and Lecturers are busy with the prescribed University syllabus, leaving them little time to develop and implement student development programs.
2. The majority of the faculty members do not have corporate experience to enlighten the students on the expectations of the industry, concerning the desired employability skills.
3. Students are under pressure to complete assignments, prepare and appear for examinations, hence, they barely have time to devote to skill development.

As per our observation, that confusion prevails more among students of Tier II and Tier III cities and grossly affects their prospects of employment and earning potential.The percentage of employable and competent students is greater in Tier I cities and Metros. My presentation is to make you understand the "Concept of Value Addition: and why "You are a product and how to enhance your employability".

Sri Shekhar Mandrekar

President & Board Director, M. J. Biopharm Pvt. Ltd., Mumbai

Sri Shekhar Mandrekar pursued his B. Sc (Hons) with Chemistry from University of Mumbai in 1976. He worked as a Marketing manager for Merind Ltd from 1990-1994, Vice President Pharma for Rallis India Ltd in Tata Group Company from 1995 to 2001, CEO at Shreya Life Sciences Pvt.Ltd from 2001 to 2004. Later he worked as Director India Operations, Ranbaxy till 2008. During his tenure at Ranbaxy, he was responsible for complete Indian operations and with his team members he launched Doxofylline formulations in India for the first time under license from Eurodrug laboratories Ltd. That was the biggest blockbuster launch of a product in India along with Dr. Reddy's Laboratories Ltd. He then moved to Eurodrug Laboratories BV, The Hague, Netherlands as Global CEO for around 3 years where he was responsible for Marketing European NCE's in about 16 countries globally. He later joined as President for Cadila Pharmaceuticals Ltd and worked upto 2015. Presently, he is serving as President and Board Director of MJ Biopharm Pvt.Ltd. the largest producer of Insulin Formulations in India. Sri Shekhar Mandrekar skills include Market planning and Market Analysis and is endorsed by many experts of these fields.

"Changing Paradigm in Pharmaceutical Industry"

Paradigm Shift in Pharma industry :

GlobalizCtion and Rapid Development of Novel Therapies: The pharmaceutical industry has become increasingly globalized, with companies operating across borders. This globalization has led to a shift in how quality is ensured. The rapid development of novel therapies, including biologics, gene therapies, and personalized medicine, requires flexible and adaptive quality approaches. Consider visualizing this shift with a world map showing pharmaceutical companies' global presence and arrows indicating the flow of products and information.

Integrated Risk-Based Approaches: Regulators, industry, and standards-setting organizations recognize the need for risk-based approaches to quality. The Analytical Procedure Lifecycle approach, which emphasizes continuous improvement and risk assessment, is gaining traction. Illustrate this concept with a flowchart showing the lifecycle of analytical procedures and how risk assessments are integrated.

Quality Throughout the Product Lifecycle: Quality should be built into systems and processes from early development through commercialization. Emphasize the importance of quality control during manufacturing, storage, distribution, and post-marketing surveillance. Use graphics to depict the product lifecycle stages and highlight quality checkpoints.

Digital Technologies and Data Management: Digital solutions, such as electronic batch records, real-time monitoring, and data analytics, enhance quality control. Show examples of digital tools used in pharmaceutical manufacturing and their impact on quality assurance. Consider using icons or infographics to represent digital technologies.

Supply Chain Resilience: The COVID-19 pandemic highlighted vulnerabilities in global supply chains. Discuss strategies for improving supply chain resilience, such as dual sourcing, inventory management, and contingency planning. Visualize supply chain networks and potential disruptions.

Translational Precision Medicine: While not directly related to quality, this paradigm shift impacts drug discovery and development. Translational Precision Medicine emphasizes data-driven approaches, biomarker discovery, and personalized treatments. Include a slide on how precision medicine aligns with quality goals. Include a slide on how precision medicine aligns with quality goals. Shift in Business focus from stockist to Physician to Patient

Prof. V.P. Singh

Professor of Medicine, Bharati Vidyapeeth deemed to be University, Medical College, Pune
Ex Pro-Vice Chancellor, Sumandeep Vidyapeeth Deemed to be University, Vadodara
Ex Professor of Medicine, Armed Forces Medical College, Pune

Dr. Col. Singh is an astute physician, a revered medical teacher, and an able medical administrator. The Soldier-scholar has served the Indian Armed Forces as a physician with distinction, at different locations including a three year deputation to Botswana (South Africa) and as part of UN peace keeping forces in Mozambique. He has been a Professor in the prestigious Armed Forces Medical College, Pune for 10 years and is presently Professor of Medicine at Bharati Medical College, Pune. Dr. Col. Singh has numerous publications and orations to his credit.

In addition to the above, Dr. Col. Singh is an erudite scholar and a gifted speaker, with vast knowledge on Indian Civilization, history and Philosophy, and equally informed on psychology and management. He has been addressing organizations and students on these issues at various platforms.

Dr.Col. Singh is also an internationally acclaimed poet in Hindi with more than 2000 solo and combined performances with top most poets and shayars, in India and abroad. His collection of poems "Raktanjali" with Kargil conflict as the background, was released on first Kargil vijay Diwas by the then Prime Minister of India, Bharat Ratna Shri Atal Bihari Vajpayee. Dr. Col. Singh was also sent on a poetry recitation tour of US by the Indian Council of Cultural Relations. He has numerous awards and honours to his credit.

"The Changing profile of the Physician and Pharmacist: The Emerging interface between them."

Abstract: The history of Physicians and Pharmacists (previously designated as Apothecaries) dates back to prehistoric times, with their references in various forms found in all ancient cultures. There were times when the same person worked as the physician and the pharmacist, with the dual role of diagnosing, prognosticating, making and dispensing medicines. However, the period from 17th to 19th century not only saw giant leaps in every field of medical sciences but also saw a segregation in the roles of the Physician and the Pharmacist, the latter being relegated to the role of dispensing prescriptions and ensuring product safety.

But the 21st century, with emphasis on evidence driven parameters, augmented by the activities of the pharma industry and the multi-tasking of a technology driven physician, has created a paradigm shift in the relationship between the physician and the pharmacist. While in ancient times the same individual played these dual roles, today the physician and the pharmacist walk shoulder to shoulder at the workplace, demonstrating a great synergy, to the benefit of the ailing humanity.

SCIENTIFIC

PRESENTATIONS

Hall: Tagore Auditorium, Osmania University Campus, Hyderabad.

Session	Abstract No.	Date and Time
Pharmaceutics/ Pharm.Quality Assurance/ Regulatory Affairs	**CQR 1 - CQR 82**	05/06/2024 3:45 PM - 6:30 PM
Pharm. Analysis/ Pharm.Chemistry/ Bioinformatics	**ACB 1 - ACB 68**	05/06/2024 3:45 PM - 6:30 PM
Pharmacy Practice/ Pharmacology	**PPC 1 - PPC 119**	06/06/2024 4:30 PM - 6:30 PM
Pharmacognosy/ Phytochemistry/ Biotechnology	**CPB 1 - CPB 16**	06/06/2024 4:30 PM - 6:30 PM

C Q R

Pharmaceutics / Pharm.Quality Assurance / Regulatory Affairs

CQR 1

DEVELOPMENT AND CHARACTERISATION OF FAST DISINTEGRATING TABLET OF AMLODIPINE BESYLATE USING MUCILAGE OF PLANTAGE OVATA AS SUPERDISINTEGRANT

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The objective of the study was to formulate and evaluate fast dissolving tablet of Amlodipine. Direct compression method was used to formulate fast dissolving tablet of Amlodipine by employing amount of croscarmellose as super disintegrant and plantago ovata as a natural disintegrate material along with direct compressible lactose to enhance mouth feel. The prepared batches of tablets were evaluated for hardness, friability, weight variation, disintegration time, drug content and in-vitro dissolution studies. Based on wetting time, disintegration time, the formulation containing croscarmellose sodium and sodium starch glycolate was found to be promising and tested for in-vitro drug release pattern in 6.8 phosphate buffer, short term stability and drug- super disintegrants interaction. F4 Formulation as processed excipient was found to be the best for the preparation of Amlodipine orally disintegrating tablets formulations. Due to it has exhibited faster disintegration time and best dissolution profile when compared to other formulations. Therefore, we concluded that the Plantago ovata mucilage as a natural superdisintergrant in the tablet is suitable for the formulation of fast disintegrating tablet.

Keywords: Amlodipine, natural disintegrants, FTIR studies, direct compression technique, invitro drug release studies, stability study

CQR 2

FORMULATION AND EVALUATION OF EMULGEL OF FLURBIPROFEN

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Topical drug delivery has been used for the treatment of local skin disorders. Emulgel have emerged as one of the most interesting topical delivery systems as it has dual control release system i.e., gel and emulsion form. One side the topical applications of the drug offer the potential advantages of delivering the drug directly to the site of action and secondly delivering the drug for extended period of time at the effected site. The major objective behind this formulation is enhancing the topical delivery of hydrophobic drug (flurbiprofen) by formulating flurbiprofen emulgel using high molecular weight water soluble polymer of hydroxy propyl methyl cellulose (HPMC K100M), carbopol 940, carbopol 941 and xanthan gum. Oleic acid and propylene glycol were used as permeation enhancers. The influence of the type of the gelling agent on the drug release from the prepared emulgel was investigated. The prepared emulgels were evaluated for their physical appearance, pH determination, viscosity, spreadability, extrudability, in-vitro drug release, ex-vivo drug release and stability. All the prepared emulgels showed acceptable physical properties, homogeneity, consistency, spreadability, viscosity and pH value. The in-vitro release rate of emulgel was evaluated using diffusion cell containing dialysis membrane with phosphate buffer pH 7.4 as the receptor medium. FOA4, FOA1, FPG4 and FOA3 have shown more than 75% drug release for 8 h respectively. Ex-vivo studies indicated that the FOA4 formulated with xanthan gum in the concentration of 2% have shown superior drug release of 56.63 % compared with the other formulations. The emulgels were found to be stable with respect to physical appearance, pH, rheological properties and drug content at all temperature and conditions for one month.

Keywords: Flurbiprofen, Emulgel, Topical delivery, Hydrophobic drug, carbopol, in-vitro

CQR 3

NANO-GELS A REVIEW ON ADVANCED DRUG DELIVERY SYSTEM IN CANCER THERAPY

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Cancer is an important cause of morbidity and mortality worldwide, irrespective of the level of human development. One of the important strategies in cancer therapy is targeted drug delivery to the specific tumour sites, known as ''Nano-gels''- robust nanoparticles that are used to deliver active drug compounds in controlled drug delivery applications. Nano-gels are aqueous dispersions of water-swollen particles that are Nano in size. An active ingredient or pharmacological agent with a high or low molecular weight can be easily encapsulated into Nano-gels and then delivered via a range of routes, including parenteral, intraocular, pulmonary, nasal, and oral, to the site of action. The Nano-gels were designed to respond to T-cell receptor (TCR) activation by releasing optimum quantities of CAR T-cells into the tumour microenvironment. The release of proteins was modulated to ensure the significant release of drug cargo which increased efficacy without increasing toxicity. The reduction-responsive Nano-gels co-loaded with DOX and Ola have extremely broad prospects for the treatment of breast cancer.

Keywords: Breast cancer, Nano-gel, Permeability, Reduced toxicity, Topical

CQR 4

LIQUISOLID SYSTEM: A NOVEL TECHNOLOGY FOR ENHANCING DRUG BIOAVAILABILITY AND PHOTOSTABILITY IN SOLID DOSAGE FORMS

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Liquisolid technique is a novel approach for delivery of drugs through the oral route. This technique is suitable for poorly soluble or water insoluble drugs, highly permeable drugs (BCS Class II drugs) and also for immediate or sustained release formulations. Enhancing the dissolution and bioavailability of these drugs is a major challenge for the pharmaceutical industry. Liquisolid technique, which is based on the conversion of the drug in liquid state into an apparently dry, non-adherent, free flowing and compressible powder. It is a novel Powder Solution Technology that involves absorption and adsorption efficiencies. During the photodegradation process the loss of drug potency may result in toxic degradation of products and causing potential side effects, thus the photostability study is an indispensable part of pre-formulation studies for photosensitive drugs. The principle behind photoprotective action of liquisolid technique is based on the photoprotective property of silicon dioxide (a commonly used coating material in liquisolid system). One of the main advantages of applying liquisolid technique in prolonging drug release is a possibility to attain a liquisolid system with zero order release kinetics. Currently, Pharmaceutical scientists research work still focuses on liquisolid system, for enhancing drug dissolution and sustaining drug release, and its potential applications in pharmaceutics are still being broadened.

Keywords: liquisolid technique, BCS Class II drugs, photostability, bioavailability

CQR 5

FORMULATION AND EVALUATION OF TERBINAFINE ANTI-FUNGAL NANOGEL FOR TOPICAL DRUG DELIVERY SYSTEM BY USING QbD APPROACH

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The aim of the present investigation was to formulate drug Terbinafine (TBH) encapsulated solid lipid nanoparticles (SLN) loaded in hyaluronic acid gel which have prolonged anti Fungal activity. The compatibility between the selected drugs and polymers has been studies using DSC and FTIR studies. The TBH-SLN have been prepared using Solvent evaporation method, These prepared nanoparticles are into Hyaluronic acid derivative gel (Na-Hy) and the final formulation was obtained. This Formulation is evaluated for pH, viscosity, Gelation time and temperature, Spreadibility, In bioadhesion, In vitro drug release, In vitro drug release, in vitro anti-fungal activity, In vivo irritation studies and in vivo anti-fungal activity. The results of compatibility studies between the drug and polymers revealed that both are compatible with each other without any unwanted interactions. Evaluation of TBH-SLN revealed that the nanoparticles formed have a particle size, zeta potential and EE of 264.9 nm, -27.7 mV and 70.09% respectively. It also showed noticeable decrease in the Colony forming units (CFU) of many Fungal strains esp. Candida albicans making it a promising gel formulation, further confirmed with In vivo studies over albino wistar rats. The prepared novel gel formulation satisfied the properties of an ideal gel in terms of gelation time, temperature, swelling, viscosity, biodegradation, biocompatibility, controlled release, anti-fungal properties which are crucial for prolonged drug release. Hence, the present study suggests that the synergistic combination of TBH loaded as SLN.

Keywords: Terbinafine, Solid lipid nanoparticles, Hyaluronic acid derivative, sodium hyaluronate, Gel formulation, fungal infections, prolonged drug release

CQR 6

REVIEW ON APPLICATIONS OF 3D PRINTING IN PHARMACY- PIXELS TO PILLS

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In recent years, 3D printing has emerged as a transformative tool within the domain of pharmacy, presenting novel opportunities for drug delivery, personalized medicine, and dosage forms customization.Applications of 3D printing in pharmacy are : Firstly, its capability to produce complex structures layer-by-layer, enabling precise control over drug composition and distribution. Unlike traditional methods, which are often limited by batch processing and standardized formulations Secondly it facilitates the creation of complex dosage forms with precise control over drug release kinetics, enhancing therapeutic outcomes and patient compliance. Additionally, the ability to tailor formulations to individual patient needs promotes personalized medicine, optimizing treatment efficacy while minimizing adverse effects. Furthermore, 3D printing enables rapid prototyping, expediting the drug development process and reducing time-to-market for novel pharmaceutical products. From fabricating patient- specific dosage forms to producing intricate drug delivery devices, its utility spans the entire pharmaceutical continuum. Moreover, 3D printing facilitates the production of paediatric and geriatric dosage forms with modified shapes and sizes, addressing unique challenges in vulnerable patient populations.

Keywords: Dosage Customization, Patient-Specific Dosage Form, Personalized Medication, 3D Printing, Rapid Prototyping

CQR 7

FORMULATION AND EVALUATION OF BIOADHESIVE MICROSPHERES

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Bioadhesive microspheres have gained significant attention in recent years due to their potential applications in targeted drug delivery systems. These microspheres offer advantages such as prolonged drug release, site-specific targeting, and improved therapeutic efficacy. This review article provides an overview of the latest advancements in bio adhesive microsphere technology, including fabrication methods, materials used, and their applications in various biomedical fields.

Keywords: Transmucosal delivery, Stimuli-responsiveness, Bioavailability, Bioadhesive Microspheres

CQR 8

THE CORE MD AND BEYOND

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Medical device regulations have its focal center on translating expert knowledge into advice for EU regulatory guidance, and building expertise in regulatory science in the clinical community, the Coordinating Research and Evidence for Medical Devices (CORE MD) project is here to review methodologies for the clinical evaluation of high-risk medical devices and recommend new designs to set an appropriate balance between innovation, safety, and clinical effectiveness. CORE-MD is a European Union Horizon 2020 project which began in April 2021 and was concluded in March 2024. For the first time ever CORE–MD consortium stands to bring together 33 medical associations, on one platform. The major objective of CORE MD is, developing guidance for the evaluation of artificial intelligence and standalone software. There will also be a focus on cardiovascular, orthopedic, and diabetes devices, since they exemplify devices used to reduce mortality and morbidity, use of real-world evidence in regulatory decision making, evidences from clinical trials on High-risk medical devices in children, establishment of post approval evidence development schemes, tools to retrieve public information on medical devices and information on the performance of these High-Risk Medical Devices. As a result the need for more sources to provide clinical evidences for medical devices is required, before they are approved for implantation in patients and to add on the focus, CORE MD project has brought brilliant potential in increasing the use of benefit measures and accelerating surrogate outcomes research which would optimize an implant's benefit-risk ratio and making CORE-MD an ambitious project with great scope.

Keywords: Medical Device, CORE MD, Europe Union.

CQR 9

REGULATIONS FOR SOFTWARE AS MEDICAL DEVICE (SAMD) – QMS REQUIREMENTS

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Due to fast evolving and emerging technology platforms, software is becoming increasingly important and omnipresent in healthcare. Given the availability of a variety of technology platforms, software is playing increasingly important role in medical devices. However, as healthcare technologies or medical devices continuously rely more on software development, one of the core challenges is examining how Health is regulated. Many of these regulatory developments fall under “medical devices”, giving rise to Software as Medical Device. In the medical device sector, it is generally accepted that following QMS requirements is one of the controls used to minimize and manage unintentional outcomes related to patient safety. QMS requirements for medical devices are defined by regulatory agencies in their regulations and in the international

standard ISO 13485—Medical Devices—Quality Management Systems-Requirements for Regulatory Purposes. In the software industry, good software quality and engineering practices are used to control the quality of software products. The objective of the document is to provide guidance on the application of existing standardized and generally accepted QMS practices to SaMD. Provide guidance for the application of QMS for the governance of organizations responsible for delivering SaMD products and managing lifecycle support processes. Highlight SaMD realization and use processes from the perspective of patient safety and clinical environment considerations as well as technology and systems environment considerations that should be addressed to ensure the safety, effectiveness, and performance of SaMD.

Keywords: Medical device, SaMD, QMS, IMDRF

CQR 10

TO EVALUATE THE ANTIOXIDANT POTENTIAL OF MONODORA MYRIYSTICA BY USING DIFFERENT OILS

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Monodora myristica is a perennial edible plant of the family Annonaceae of flowering plants. It possesses an impressive range of medicinal and nutritional properties. The major compounds found in the essential oil from the seeds are alpha-phellandrene, alpha-pinene, myrcene limonene and pinene. Lipid oxidation is one of the major reasons that food deteriorates and is caused by the reaction of fat and oil with molecular oxygen, leading to off- flavours that are generally called rancidity. The keeping quality of the oils is basically dependent on their percentages of degree of unsaturation rancidiy is associated with off- flavour and odour of the oil. The present work deals with the evaluation of the antioxidant potential of nutmeg by using groundnut oil & palm oil. The fine nutmeg powder was added to the oils in four different proportions (0.2, 0.4, 0.6, 0.8gms) to 100ml of palm oil and ground oil simultaneously. From the above solution 10ml of sample is taken and dissolved in 1:1 ratio of ethanol & diethyl ether mixture until clear solution is obtained and is titrated by using 0.1M Potassium hydroxide as titrant and phenolphthalein as indicator. The pH is checked by using pH paper and titrations are carried out on 7th, 14th, and 21st day after preparing the sample and the acid values are calculated. As the no. of days increased an increase in acid value which shown the effect of antioxidant potential of nutmeg. Hence ,Monodora myristica extract yielded reducing effect in the oxidative level of the oil varieties.

Keywords: Monodora myristica, Antioxidant potential, Rancidity.

CQR 11

FORMULATION AND EVALUATION OF MUCOADHESIVE MICROSPHERES LOADED WITH ESOMEPRAZOLE MAGNESIUM TRIHYDRATE

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Mucoadhesive microspheres have emerged as promising carriers for drug delivery due to their ability to adhere to mucosal surfaces, thereby prolonging residence time and enhancing therapeutic efficacy of various drugs, particularly those targeting mucosal surfaces. Microspheres constitute an important part of the novel drug delivery system by virtue of their small size and efficient carrying capacity. Due to their long residence time, bioadhesive characteristics mucoadhesion can be coupled to microspheres to develop mucoadhesive microspheres. Mucoadhesive Microspheres exhibit a prolonged residence time at the site of application or absorption and facilitate an intimate contact with the underlying absorption surface and thus contribute to improved and better therapeutic performance of drugs and also Mucoadhesive microspheres have advantages like efficient absorption and enhanced bioavailability of the drugs due to a high Surface to volume ratio, a much more intimate contact with the mucus layer, controlled and sustained release of drug from Dosage form and specific targeting of drugs to the absorption site. Mucoadhesive microspheres have been developed for oral, Buccal, nasal, ocular, rectal and vaginal for either systemic or local effects. It is an ideal targeting system with high safety Profile. This review article gives the information about mucoadhesion and theories of mucoadhesion.

Keywords: Mucoadhesive microspheres, Bioadhesive, bioavailability, controlled and sustained release

CQR 12

PREPARATION AND DEVELOPMENT OF CHRYSIN TRANSFEROSOME LOADED TRANSDERMAL PATCH

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This study focuses on the development and assessment of a novel transdermal phytochemical delivery system utilizing Chrysin filled transferosomes inculcated into a transdermal patch. Chrysin, is a bioactive compound found in Passiflora cearulia possesses therapeutic potential for various medical problems like inflammation, cancer etc. the bioavailability of chrysin is very less which limits its use as an anti-inflammatory agent. Novel drug delivery systems, not only improve the solubility of the drug but also improve the bioavailability of the drugs. Transferosomes, lipid based vesicular carriers, are used to encapsulate and liberate Chrysin through the skin barrier. The study utilizes formulation techniques, lipid composition selection, encapsulation techniques, and stabilization methods. The physicochemical properties of the developed Chrysin-filled transferosomes are assessed, using size distribution, Zeta potential, macroscopy, and encapsulation efficiency. The findings of this study hold effective promise for the transdermal phytochemical delivery and show a way for further analysis and application of transferosome-based transdermal patches for improved therapeutic outcomes.

Keywords: Chrysin, Passiflora cearulia, SEM, transferosomes, transdermal patch, zeta potential.

CQR 13

FORMULATION AND EVALUATION OF ORAL JELLIES FOR ALLERGITIS IN PAEDIATRICS

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Oral jelly is a semisolid preparation that would resolve problem associated with dosage forms swallowing especially in paediatrics. This work aimed to prepare oral jelly using Betel leaf extract. Technique involved in jellies preparation is simple mixing method. They were formulated using 3 different polymers acacia, pectin, and sodium alginate in different ratios. The effect of these polymer concentrations was studied and evaluated for pH, weight variation, crystallization, translucency, stickiness and grittiness. The results revealed that Sodium alginate gave acceptable jelly appearance and consistency. This work succeeded in the preparation of oral jelly using betel leaf extract which can be considered a promising dosage form for enhancement of patient compliance.

Keywords: Oral jellies, betel leaf extract, polymers, crystallization, consistency

CQR 14

FORMULATION AND EVALUATION OF SOLID LIPID NANOPARTICLES (SLN'S) OF FESOTERODINE FUMERATE BY QBD APPROACH

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Solid lipid nanoparticles are submicron colloidal particles composed of solid lipid core surrounded by a stabilizing layer of surfactants. They are spherical in size and shape ranging from 10 to 1000nm. The present work is a comprehensive study on the formulation and evaluation of SLNs (solid lipid nanoparticles) loaded with Fesoterodine fumarate, a potent antimuscarinic agent used to treat overactive bladder syndrome. The research aim is to develop an optimized drug delivery system that enhances the therapeutic efficacy and solubility of Fesoterodine fumarate. Solid lipid nanoparticles of Fesoterodine fumarate are prepared by using lipid (GMS) with stabilizers (tween-80). Solid lipid nanoparticles (SLNs) were used to quantify the particle size, entrapment effectiveness, zeta potential, and polydispersity index (PDI) of each. A systematic technique was used, combining a high shear homogenizer with a probe sonicator. To optimize the formulation employed a 32-well randomized full factorial design (FD) to optimize lipid and surfactant concentrations. Two variables are assessed in this design, each at three levels, and experimental trials are carried out in each of the nine conceivable configurations. Considered two independent variables, the amount of surfactant and the amount of drug: lipid ratio. Particles with an average size of 563.2 nm and a PDI of 0.625 were created with 96.8 percent entrapment efficiency. The formulation was found to have a zeta potential of + 3.67mV. F1 formulation containing 94.26% drug release rate showed best results. The findings of this research hold promise for improving the therapeutic outcomes of Fesoterodine fumarate. Thus, concluded that the drug's solubility was enhanced and its release was prolonged by being entrapped in a solid lipid carrier.

Keywords: Fesoterodine fumarate, Lipid, particle size, Solid lipid nanoparticles (SLN's)

CQR 15

FORMULATION DEVELOPMENT AND IN VITRO EVALUATION OF TELMISARTAN NANOSUSPENSION BY QbD

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Pharmaceutical nanosuspensions are aqueous dispersions of poorly soluble drug particles stabilized by surfactant, polymer, or both. Telmisartan is used for the treatment of hypertension and prevents the brain damage by activation of PPAR gamma in brain. In treating CNS disorders, the intra nasal route is one of the best choice for drug administration, provides a way to directly transport the medication to the brain. Tween 80, methanol, and water were used to prepare Telmisartan loaded nano suspension by anti-solvent precipitation procedure.With varying stabilizer concentrations and sonication cycles, total nine formulations (F1–F9) were formulated. Tween 80 concentration (0.1, 0.3, and 0.5%) and sonication cycles (4, 7 and 10 cycles) were employed as independent variables, and in vitro drug release, particle size, and PDI as dependent variables. Optimization was carried out by 3 2 factorial design using Design Expert 13 software by Central composite design from the methodology of response surface. The mean particle size for the formulations were in the range of 155 nm to 893 nm and PDI from 0.131 to 0.561 with zeta potential in the range of - 11.8 to -16.0 mV with a drug release from 89.24 ± 0.11 to 96.150 ± 006. The optimized formulation (F9) from overly plot was observed to have an increase drug release (96.150 ± 006), particle size (155 nm) and a PDI (0.131), which was statistically significant with a P value > 0.0500. The optimized formulation F9 showed an enhanced solubility.

Keywords: Telmisartan nanosuspension, Intranasal route, Particle size and PDI, Zeta potential, Design Expert 13.

CQR 16

FORMULATION AND IN VITRO EVALUATION OF DOXOFYLLINE CHITOSAN MICROSPHERES BY EMULSION CROSS LINKING METHOD USING SURFACE RESPONSE METHODOLOGY

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This study focuses on the formulation and in vitro evaluation of Doxofylline loaded chitosan microspheres, employing the emulsion cross-linking method in conjunction with surface response methodology in Design Expert 13 software. The aim was to optimize the microsphere characteristics to enhance drug delivery efficacy. Chitosan was utilized to encapsulate doxofylline, a bronchodilator used in the treatment of respiratory diseases. The emulsion cross- linking technique facilitated the formation of microspheres. By using surface response methodology effect of independent factors on dependent factors estimated. The resulting microspheres were evaluated for their morphology, encapsulation efficiency, particle size determination and in vitro drug release profile. The optimized formulation demonstrated a desirable particle size, high encapsulation efficiency and a controlled release pattern of doxofylline. These findings suggest that chitosan microspheres formulated through this method could be a promising approach for improving doxofylline delivery, potentially enhancing its therapeutic efficacy and patient compliance in respiratory disease management.

Keywords: Doxofylline, Emulsion Cross-linking, Surface response methodology, Respiratory diseases, Bronchodilator

CQR 17

FORMULATION AND IN VITRO EVALUATION OF TRANSDERMAL PATCHES BY BOX-BEHNKEN DESIGN

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Piperine, an alkaloid with a broad spectrum of pharmacological actions, is found in plants belonging to the Piperaceae family, such as Piper nigrum and Piper longum. Its poor solubility- which places it in BCS Class II- makes it challenging to deliver effective doses for therapeutic activity. Piperine exhibits properties like antioxidant, anti-inflammatory, antihypertensive, hepatoprotective, and neuroprotective. Transdermal drug delivery systems are one of the categories of novel drug delivery systems to avoid first-pass metabolism and release drugs in a controlled manner. The present investigation is aimed to formulate and evaluate the transdermal patches of piperine by using Design Expert -13 software by Box-Behnken design. Piperine patch formulations were prepared by solvent casting technique by using two polymeric combinations such as Hydroxy propyl methyl cellulose E-15, Eudragit. Propylene glycol used as a plasticizer, Tween-80 as an enhancer, and Dichloromethane as solvent system. Formulations F1 to F7 performed with various evaluation tests such as thickness, folding endurance, weight variation, content uniformity, and In vitro drug release studies. FTIR and DSC studies showed no interaction between drug and polymer. The highest-releasing formulation is found to be F5. Hydroxy propyl methyl cellulose E-15 is the preferred film-forming polymer.

Keywords: Piperine, Transdermal patch, Hydroxy propyl methyl cellulose E-15, Eudragit.

CQR 18

SELF-NANO EMULSIFYING DRUG-DELIVERY SYSTEMS

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Self-Nano emulsifying drug delivery systems (SNEDDS) are one of the emerging strategies developed to tackle the issues associated with the oral delivery. Self-Nano emulsifying drug delivery systems (SNEDDS), which are Isotropic mixtures of oils, surfactants depends on many formulations related parameters, such as surfactant concentration, Oil /surfactant ratio, polarity of the emulsion, droplet size and charge, all of which in essence determine the self-emulsification ability. With the growing interest in this field, there is an increasing need for selection of excipients guidelines to obtain effective and safe delivery system with improved bioavailability. The aim of this study is to present the composition, role of various excipients, factors, Biopharmaceutical aspects affecting the formulation.

Keywords: Oral bioavailability, Self-Nano Emulsifying Drug Delivery Systems (SNEDDS), lipid formulation classification system (LFCS)

CQR 19

FORMULATION, DEVELOPMENT AND IN-VITRO EVALUATION OF LANSOPRAZOLE NANOSTRUCTURED LIPID CARRIERS

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Lansoprazole is a proton pump inhibitor belonging to a class of anti-secretory compounds and used to treat gastric ulcer. Lansoprazole loaded nanostructured lipid carriers (NLCs) were prepared by high-pressure homogenization method using oleic acid and stearic acid as a liquid and solid lipids respectively. The prepared NLCs were characterized for FTIR (Fourier transform infra-red spectroscopy). The encapsulation efficiency was found to be in the range of 63 - 86%. The in vitro release profile of NLCs indicates that all the batches showed sustained drug release over an extended period of 12h. From the in vitro drug release profiles, it was also observed that the drug release from NLCs was increased with increasing the solid-lipid ratio; visualization studies indicated that the NLCs were spherical in shape with smooth surface. Among the nine formulations F 9 are found to be showed that highest drug release. The data obtained in this study suggests that Nanostructured lipid carriers of Lansoprazole are promising for controlled drug delivery, which can reduce dosing frequency.

Keywords: FTIR, Lansoprazole, Nano lipid carrier,Oleic acid, Stearic acid, first order.

CQR 20

FORMULATION DEVELOPMENT AND EVALUATION OF TRANDOLAPRIL FAST-DISSOLVING ORAL THIN FILMS BY USING BOX-BEHNKEN DESIGN

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Angiotensin converting enzyme (ACE) inhibitors include Trandolapril, regulates blood pressure. Oral thin films breakdown quickly in the mouth along with the medication, and most of the medication enters the systemic circulation by way of the buccal/oral mucosa, bypassing first-pass metabolism. Utilising the solvent casting method, trandolapril fast dissolving oral thin films were created utilising a variety of film-forming ingredients, including saccharin as a sweetener, HPMC E15 as a polymer, and polyethylene glycol 400 as a plasticizer, citric acid as a saliva stimulating agent. The evaluation parameters such as weight variation, thickness, folding endurance, drug content, disintegration time, and In vitro dissolution studies, stability studies were performed

for oral thin films. The formulations of oral fast dissolving film were optimized by employing Box-Behnken design from Design Expert-13 Software. Trandolapril oral thin films had a smooth surface, transparent, and were clear. Though all the formulations equally passed the evaluation parameters, it is concluded that oral thin films containing 425 mg of HPMC E15(Hydroxy propyl methyl cellulose-E15) as the polymer considered as optimized formulation because of better dissolution profile. The optimized film disintegrated in less than 60 seconds, releasing more than 90% of drug within 90sec.

Keywords: Trandolapril, Solvent Casting method, Box–Behnken design, In vitro dissolution studies and Oral thin films

CQR 21
AN OVERVIEW OF TOPICAL FILM FORMING SYSTEMS

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Topical film forming systems presents a novel platform to deliver drugs to the skin both topical and transdermal drug delivery to provide an alternative for conventional dosage form, that permits prolonged drug residence for dermatological problems and as a tissue glues for closing of operative lesion, wounds. Film forming topical formulation are solutions / sprays, gels, emulsion are a novel approach is as an alternative to the conventional dosage forms (ointment, creams or patches) topically on skin. The polymeric solution is an applied to the skin as a liquid and forms a transparent invisible film by solvent evaporation. A plasticizer is usually added to improve the flexibility and enhance the tensile strength to the film. It is also possible to control and sustain the drug release from the films by controlling the polymeric content, concentration of plasticizer, or formulation with other additives. These are intended for skin application as emollient or protective and for local action or transdermal penetration of medicament for systemic action. Film forming system offers sustained release drug delivery system with increase resistance time, reduce skin irritation, improve skin adhesion property, increase drug release and increase patient comfortability. Researches continue to explore further development of this novel topical drug delivering technology, to prove the relevance of film forming system as transdermal dosage form.

Keywords: Topical film forming system, plasticizer, polymeric solution, sustained drug release

CQR 22
DESIGN AND INVITRO CHARACTERIZATION OF NON- EFFERVESCENT FLOATING TABLET OF CEFACLOR

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In the present research work gastro retentive non effervescent floating matrix formulation of Cefaclor by using various hydrophilic polymers. Initially analytical method development was done for the drug molecule. Absorption maxima was determined based on that calibration curve was developed by using different concentrations. Gas generating agent sodium bicarbonate concentration was optimized. Then the formulation was developed by using different concentrations of polymers of various grades of HPMC. The formulation blend was subjected to various preformualation studies, flow properties and all the formulations were found to be good indicating that the powder blend has good flow properties. Among all the formulations the formulations prepared by using HPMC K4M were unable to produce desired drug release, they were unable to retard drug release up to 12 hours. The formulations prepared with HPMC K 15 M retarded the drug release up to 12 hours in the concentration of 90 mg (F6).The formulations prepared with HPMC K100M were also retarded the drug release for more than 12 hours. Hence they were not considered. The optimized formulation dissolution data was subjected to release kinetics, from the release kinetics data it was evident that the formulation followed Higuchi mechanism of drug release.

Key words: Cefaclor, gastro retentive non effervescent floating, HPMC K 15 M, HPMC K 4 M, HPMCK100M.

CQR 23

METHOD DEVELOPMENT AND VALIDATION FOR DETERMINATION OF ELITRIPTAN IN HUMAN PLASMA THROUGH LC-MS/MS

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An accurate method for determining the presence of eletriptan in human plasma has beendeveloped using liquid chromatography-tandem mass spectrometry (LC-MS/MS). Eletriptan D5 was used as an internal standard to spike 100 µL of plasma containing elitriptan, and the protein precipitation extraction method was used to extract the sample. Using an Agilent ZORBAX Eclipse XDB,C8 analytical column measuring 4.6 x 100 mm and 3.5 μm, chromatographic separation was accomplished using a mobile phase consisting of 1% glacial acetic acid and 10 mM ammonium acetate maintained at pH 7.01 (35:65) at a flow of 0.7mL/min. The Total run time was 4.50 min.To increase the sensitivity and selectivity needed for this application, turbo ion spray (TIS/ESI) in positive ion mode was chosen. Using linear 1/x2 regression analysis, the linearity of the curve ranging between 0.507 ng/mL-305.385 ng/mL was confirmed, and 0.507 ng/mL was designated as the lower limit of quantification.Eletriptan hydrobromide in human plasma could be determined using the suggested method, which was validated in accordance with ICHQ2(R1) guidelines. The developed method was discovered to be precise, selective and sensitive and accurate.

Keywords:- Elitriptan, Elitriptan D5, protein precipitation extraction method, LC-MS/MS.

CQR 24

DEVELOPMENT AND CHARACTERIZATION OF BUCCAL PATCHES FOR DELIVERY OF LORNOXICAM

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Lornoxicam is a therapeutic agent with nonsteroidal anti-inflammatory (NSAID) activity with strong analgesic and anti-inflammatory actions. However, oral administration is associated with gastrointestinal adverse effects, necessitating alternate delivery routes. Buccal patches have emerged as a viable method for regulated drug delivery, with various benefits including increased bioavailability, reduced first-pass metabolism, and the avoidance of hepatic metabolism. In this study, buccal patches for lornoxicam were made with hydroxypropyl methylcellulose (HPMC) as the polymer matrix. To improve the formulation, several medication and polymer ratios were tested. The drug-polymer mixture was made using the solvent casting process, and a suitable plasticizer was incorporated to increase flexibility and adherence to the buccal mucosa. The patches were evaluated for physicochemical properties like thickness, weight fluctuation, drug content homogeneity, and morphology. The patches were also examined for in vitro drug release using Franz diffusion cells. Overall, the produced buccal patches demonstrated promising qualities such as homogeneous drug content, good adherence, and a prolonged drug release profile. These findings support the use of buccal patches as a novel and effective lornoxicam delivery strategy, providing a safer and more efficient alternative to traditional oral administration. FTIR investigations demonstrated that lornoxicam and HPMC were compatible with each other. Further research is needed to determine the in vivo performance and therapeutic efficacy of these buccal patches.

Keywords: Lornoxicam, bioavailability, solvent casting process, Franz diffusion cells.

CQR 25

EFFECT OF NATURAL PERMEATION ENHANCERS ON TRANSDERMAL DELIVERY OF DICLOFENAC GEL FORMULATION

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Diclofenac, a non-steroidal anti-inflammatory drug (NSAID), has antipyretic and analgesic effects primarily due to the inhibition of prostaglandin synthesis, which sensitizes pain receptors. Enhancing the penetration of drugs through the skin is challenging because the skin is designed to be a barrier. Various methods, including the use of permeation enhancers (PEs), have been developed to improve drug delivery. Natural terpenes, a very safe and effective class of PEs. Compared to synthetic PEs, natural terpenes have been proved to possess higher enhancement activity. The key factor affecting the enhancement effect is the lipophilicity of both terpenes and drug molecules. In addition, a lot of terpenes have also been proved to be much less toxic compared to azone, the classic synthetic PE. The current research aims to develop and characterize gel of Diclofenac by using different permeation enhancers. In the present research work an attempt has been made to formulate gel by using Carbopol 934 as gelling agent with different permeation enhancers like Eugenol, Eucalyptus oil, Menthol and evaluated for various characterization studies. Three formulations were prepared, showing good homogeneity, with formulation F2 demonstrating better drug release.

Keywords: Diclofenac, Natural permeation enhancers, terpenes

CQR 26

PREPARATION AND CHARACTERIZATION OF HIBISCUS EXTRACT LOADED NANOEMULGEL

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Nanoemulgel is an emanating drug delivery system particularly being explored in research and development of various topical formulations for both pharmaceutical and cosmeceutical applications. Nanoemulgel consists of emulsion, which can be water in oil or oil in water type, incorporated into gel base. The gel base is prepared using gelling agent which modifies emulsion into non-greasy, more stable, and viscous formulation. Now a days there is an intensely usage of natural bioactive materials as medicinal agent in pharmaceutical industries. This study aimed to fabricate and optimized hibiscus extract loaded nanoemulgel (NEG) for transdermal delivery. NEG was prepared by high sheared homogenization technique and characterized for organoleptic evaluation, thermodynamic stability, Ph analysis, zeta analysis, viscosity, spreadability, accelerated stability. The formulations showed optimum thermodynamic stability, having no phase separation and color change. The homogeneity of the F1, F2, F3, F4 showed no coarse particles. The pH was in the range of human skin range i.e. 5.5–6.5. The mean droplet size of F1, F2, F3, F4 were 120.26nm, 139.6nm, 148.6 nm, 153.4 nm, respectively. The zeta potential of the F1, F2, F3, F4 were - 9.91 ± 0.24,-15.6 ± 0.56,-24.06 ± 0.25,-29.06 ± 0.2 (Mv) respectively. The spreadability of the F1, F2, F3, F4 were performed by slip and drag method and spreadibility were found 35.57 ± 0.48, 38.25 ± 0.27, 36.54 ± 0.34, 40.27 ± 0.23 (g.cm/sec) respectively. Further research is to compare the efficacy of nanoemulgel formulations of hibiscus extract with conventional hibiscus extract formulations and standard drugs in wound healing.

Keywords: Bioactive compounds, hibiscus extract, nanoemulgel, viscosity, spreadibility, PH

CQR 27

ENHANCEMENT STRATEGIES FOR TRANSDERMAL DRUG DELIVERY SYSTEMS: CURRENT TRENDS AND APPLICATIONS

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Transdermal drug delivery systems have become an intriguing research topic in pharmaceutical technology area and one of the most frequently developed pharmaceutical products in global market. The use of these systems can overcome associated drawbacks of other delivery routes, such as oral and parenteral. The authors will review current trends, and future applications of transdermal technologies, with specific focus on providing a comprehensive understanding of transdermal drug delivery systems and enhancement strategies. This article will initially discuss each transdermal enhancement method used in the development of first-generation transdermal products. These methods include drug/vehicle interactions, vesicles and particles, stratum corneum modification, energy-driven methods and stratum corneum bypassing techniques. Through suitable design and implementation of active stratum corneum bypassing methods, notably microneedle technology, transdermal delivery systems have been shown to deliver both low and high molecular weight drugs. Microneedle technology platforms have proven themselves to be more versatile than other transdermal systems with opportunities for intradermal delivery of drugs/ biotherapeutics and therapeutic drug monitoring. These have shown that microneedles have been a prospective strategy for improving transdermal delivery systems. Various non-invasive administrations have recently emerged as an alternative to conventional needle injections. A transdermal drug delivery system (TDDS) represents the most attractive method among these because of its low rejection rate, excellent ease of administration, and superb convenience and persistence among patients. In this review, we describe the different types of available TDDS methods, along with a critical discussion of the specific advantages and disadvantages, characterization methods, and potential of each method. Progress in research on these alternative methods has established the high efficiency inherent to TDDS, which is expected to find applications in a wide range of fields.

Keywords: TDDS, microneedles, non-invasive administrations, intradermal delivery.

CQR 28

DEVELOPMENT AND ASSESSMENT OF TELMISARTAN MICROEMULSION FOR ORAL DELIVERY

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The primary objective of this study is to develop a microemulsion of Telmisartan for oral delivery. Microemulsions were prepared using oleic acid and castor oil as the oil phase, Tween 80 as the surfactant, and propylene glycol and polyethylene glycol as co-surfactant. A pseudo-ternary phase diagram guided the formulation process, resulting in nineteen formulations: thirteen with oleic acid and six with castor oil. These formulations were evaluated based on parameters such as drug content percentage, in vitro dissolution, pH, percentage transmittance, particle size, polydispersity index (PDI), zeta potential, centrifugation stability, FTIR, and overall stability. Dissolution studies revealed that the F4 and F17 formulations exhibited the highest drug release (>90%), indicating improved dissolution compared to pure Telmisartan. Further evaluations of F4 and F17 included pH, percentage transmittance, particle size, and PDI measurements. Centrifugation studies showed no phase separation in the F4 formulation, which comprised 9 ml oleic acid, 6 ml Tween 80, 3 ml propylene glycol, and 1 ml water, identifying it as the optimized formulation.

This F4 formulation was further subjected to IR identification, stability studies, and release kinetics analysis. The results indicate that the F4 microemulsion is a promising novel drug delivery system for oral Telmisartan administration.

Keywords: Microemulsion, Oral delivery, Telmisartan, Pseudo-Ternary phase diagram.

CQR 29

SOLUBILITY IMPROVEMENT TECHNIQUES TO ENHANCE DISSOLUTION PROPERTY OF SIMVASTATIN BY VARIOUS METHODS

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The objective of the study was to increase the solubility, and dissolution rate of Simvastatin, a poorly water-soluble 3-hydroxy3-methyl glutaryl CoA (HMG-CoA) Reductase inhibitor through solid dispersion techniques and inclusion complexation with β-cyclodextrin (β-CD). Several formulations were prepared by using kneading, fusion, solvent evaporation and Inclusion complex methods. The prepared different formulations were evaluated for their flow properties such as bulk density, tapped density, angle of repose, Carr's compressibility index and Hausner's ratio. The interaction between drug and excipients were studied by FTIR. In vitro dissolution profiles of formulations were studied. Formulations K3, SV1, F2 and IC1 have shown good dissolution results within 20 min. Among those formulations solvent evaporation SV1 has considered as optimized formulation due to good dissolution results in less time.

Keywords: Simvastatin, PEG 4000, MCC, magnesium stearate, beta cyclo-dextrin.

CQR 30

VIROSOMES AS A NOVEL CARRIER FOR DRUG DELIVERY SYSTEM

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Virosomes are reconstituted viral envelopes they act as vaccines and vehicles for cellular delivery of various macromolecules. The anticipation of drug delivery and targeting systems using virosomes is very interesting research and development field. Where virosomes are biocompatible, biodegradable, non toxic and non-autoimmunogenic; they have been made to utilize them as vaccines and adjuvants as well as delivery systems for drugs and biological for therapeutic cause. Influenza virus is the most common virus of where virosomes are reconstituted influenza virus envelopes devoid of inner nucleic acid core and hence genetic information. The particulate structure and function of the surface hemagglutinin protein is binding to the cell receptor, mediates pH dependent membrane fusion leading to cellular delivery of the encapsulated biological active molecule. Different protein, peptide and malaria drugs are loaded into virus to delivery at a particular site to provide targeted drug delivery system.

Keywords: Drug delivery, genes, vaccines, virosomes, virus.

CQR 31

A REVIEW ON NOVEL DRUG DELIVERY SYSTEMS FOR TARGETING METABOLIC DISORDERS ASSOCIATED WITH INFLAMMATION USING PHYTOCHEMICALS

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The global incidence of metabolic disorders is on the rise, posing a significant challenge to public health. With remarkable advancements in diagnostic tools and clinical procedures, our understanding of the etiology and underlying pathophysiology of these disorders has expanded considerably. Natural compounds isolated from various sources have garnered extensive attention as prospective drug candidates for the treatment of conditions such as diabetes, obesity, heart-related diseases, and cancer. This interest is partly attributed to their inherent antioxidant and anti-inflammatory properties. Concurrently, intensive research efforts have been directed towards enhancing the bioactivity and bioavailability of these compounds through selected drug delivery strategies. The extensive array of molecules derived from natural products that have undergone clinical trials highlights the ongoing promise of natural products as a source for the development of innovative therapeutics. Metabolic disorders are complex conditions that often necessitate the use of multiple medications

to achieve an effective pharmacological response. In this context, the utilization of pharmaceutical preparations derived from natural products holds promise as a safer option. Natural products are widely recognized for their lower risk of triggering harmful adverse effects, making them a viable choice for addressing metabolic disorders. Therefore, it is imperative to address this issue promptly and decisively to narrow the gap in providing scientific evidence supporting the benefits of phytochemicals derived from plants in the management of metabolic disorders. Such efforts are crucial for providing substantial support in the ongoing fight against the rising incidence of diseases associated with metabolic disorders.

Keywords: Inflammation, phytochemicals, advancement, metabolic disorders, diabetes, obesity,treatment.

CQR 32

COMPUTATIONAL & EXPERIMENTAL EXPLORATION OF SILVER NANOPARTICLES: GREEN SYNTHESIS, CHARACTERIZATION AND BIOLOGICAL EVALUATION

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The green synthesis of silver nanoparticles (AgNPs) using natural extracts offers a sustainable, cost-effective alternative to hazardous chemicals with applications in medicine, catalysis, and electronics. This study evaluated the anthelmintic activity of Peltophorum pterocarpum flower extract and its AgNPs against Pheretima posthuma and conducted an in silico analysis of its phytocompounds. Worm infections are prevalent in developing countries, and phytoconstituents are crucial for treating various ailments.The methanolic extract of Peltophorum pterocarpum and its silver nanoparticles were evaluated for their anthelmintic properties on earthworms at concentrations of 25 mg/ml, 50 mg/ml, and 100 mg/ml. The study measured the paralysis and death times of adult Indian earthworms. Albendazole at 10 mg/ml was used as the standard, and normal saline in distilled water served as the control.The study found that the methanolic extract of Peltophorum pterocarpum demonstrated significant anthelmintic activity compared to Albendazole at 10 mg/ml. Docking studies indicated that all phytocompounds in Peltophorum pterocarpum exhibited binding affinity, with Quercetin showing a particularly strong binding affinity of approximately -8.2 Kcal/mol, compared to the standard drug Albendazole, which showed a binding affinity of about -7.7 Kcal/mol.The study revealed that the methanolic extract silver nanoparticles of Peltophorum pterocarpum exhibited stronger anthelmintic properties compared to both the standard Albendazole at 10 mg/ml and the methanolic extract of Peltophorum pterocarpum. The silver nanoparticles showed dose-dependent anthelmintic activity, surpassing the methanolic extract. These findings were supported by docking studies, which demonstrated that the phytocompounds in Peltophorum had excellent docking scores compared to the standard Albendazole.

Keywords: Peltophorum Pterocarpum, Leguminosae, Pheretima, Anthelmintic, Docking

CQR 33

DEVELOPMENT AND EVALUATION OF TELMISARTAN NANOPARTICLES FOR SUSTAINED RELEASE

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Telmisartan loaded chitosan nanoparticles were prepared by ionotropic gelation using sodium tripolyphosphate, tween 80 as ionic cross-linker and stabilizer respectively. Telmisartan nanoparticles were evaluated for particle size, zeta potential, % yield, % drug content, % entrapment efficiency, surface morphology, drug-polymer compatibility studies (FT-IR, DSC and PXRD) and in vitro diffusion studies. The optimized telmisartan nanoparticles were evaluated in vivo pharmacokinetic studies. Telmisartan nanoparticles size and Zeta potential was found to be in the range of 220-460 nm and 6.2 mV to 13.6 mV respectively. SEM analysis revealed that the telmisartan nanoparticles were spherical with smooth surface. FT-IR, DSC and PXRD revealed no interaction between telmisartan and polymers. Around 65 to 99% of telmisartan was entrapped in nanoparticles. Formulation F-II showed highest (87.7%) release of telmisartan from nanoparticles with first order and non-fickian pattern of release. In vivo study revealed that the MRT and t1/2 has been significantly increased for optimized nanoparticles showing evidence in enhancement of bioavailability and success of the formulation. The formulation F-II were filled in enteric coated capsule. The f1 (dissimilarity factor) and f2 (similarity factor) was 364 and 34 respectively which clearly indicates there is a lot of difference between the finished product to that of the marketed formulation. The data obtained from this study proves that chitosan nanoparticles are potential candidates for the improvement in aqueous solubility and thereby enhancement of bioavailability of Telmisartan.

Keywords: Telmisartan, nanoparticles, particle size, zeta potential, in vitro diffusion studies.

CQR 34

BILAYER TABLETS: A DEVELOPING NOVEL DRUG DELIVERY SYSTEM

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Bilayer tablets are novel drug delivery systems where combination of two drugs in a single unithaving different drug release profiles can be delivered.Bilayer tablets improve patient compliance, prolong the drug action and can deliver two incompatible drugs in a single formulation.A bilayer tablet is suitable for the sequential release of two drugs in combination and also works as a long-acting tablet, where one layer act as immediate-release as a initial dose and second layer is a sustained-release as a maintenance dose.Moreover, these bi-layer tablets are used for anti-hypertensive drugs,andanalgesic drugs.Which are often used in combination therapy.Different technologies for preparing bi-layer tablets such as OROS® push pulls Technology, L-OROSTM Technology, EN SO TROL Technology, DUREDAS™ Technology and DUROS Technology.Bilayer tablets are advancing helpful technologies to overcome the disadvantages of single-layered tablets.

Keywords: Bilayer tablets, immediate release, controlled release, incompatability.

CQR 35

EXPLORING THE RECENT PATENTS, CLINICAL TRIALS, AND REGULATORY HORIZONS OF PROTACS IN CANCER THERAPY

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While various targeted therapies exist for cancer, resistance mechanisms remain a significant challenge. Recent advancements in cancer treatment have led to the emergence of proteolysis- targeting chimeras (PROTACs), a promising technology utilizing hetero-bifunctional molecules to target and degrade proteins implicated in cancer progression through the ubiquitin-proteasome system (UPS). PROTACs offer a novel approach, with recent studies and clinical trials demonstrating promising outcomes in degrading endogenous proteins linked to cancer. This work explores recent innovations, regulatory approvals, and ongoing clinical trials of PROTAC technology in cancer management. It emphasizes the importance of quality considerations and regulatory compliance to expedite approvals from relevant authorities. It also discusses the evolving landscape of PROTACs, highlighting challenges and opportunities associated with their implementation. Despite these preliminary efforts, PROTACs show immense potential in effectively addressing cancer. Their ability to target specific proteins for degradation represents a significant advancement in cancer therapeutics, offering new hope for improved outcomes in patient care.

Keywords: proteolysis-targeting chimeras (PROTACs), clinical trials, Regulatory, Cancer Therapy.

CQR 36

FORMULATION AND IN VITRO EVALUATION OF LANSOPRAZOLE FAST-DISSOLVING ORAL THIN FILMS BY USING CENTRAL COMPOSITE DESIGN

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It's used for indigestion, heartburn, acid reflux and gastroesophageal-reflux-disease (GORD). Lansoprazole is also taken to prevent and treat stomach ulcers. Oral thin films breakdown quickly in the mouth along with the medication, and most of the medication enters the systemic circulation by way of the buccal/oral mucosa, bypassing first-pass metabolism. Utilising the solvent casting method, Lansoprazole fast dissolving oral thin films were created utilising a variety of film-forming ingredients, including polyethylene glycol 600 as plasticizer, saccharin as a sweetener, HPMC E15 as a polymer, and as a plasticize, citric acid as a saliva stimulating agent. The evaluation parameters such as weight variation, thickness, folding endurance, drug content, disintegration time, and In vitro dissolution studies were performed for oral thin films. The formulations of oral fast dissolving film were optimized by employing Central composite design from Design Expert-13 Software. Lansoprazole oral thin films had a smooth surface, transparent, and were clear.

Keywords: Lansoprazole, Solvent Casting method, Central composite design, Design Expert -13 and Oral thin films.

CQR 37

FORMULATION AND IN VITRO EVALUATION OF ZAFIRLUKAST NASAL MICROEMULSION BY QBD

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The objective of this study was to develop an intranasal micro-emulsion containing zafirlukast which is a leukotriene receptor antagonist. In this research, isopropyl myristate was chosen as the oil phase, while tween 80 and polyethylene glycol 400 were selected as the surfactant and co-surfactant, respectively, based on their solubility characteristics. Zafirlukast could be used as an alternative intranasal route to oral, hence improving absorption rate and bioavailability.This study highlights the formulation and in vitro evaluation of zafirlukast nasal microemulsion using a quality-by-design (Design Expert 13) approach. The prepared micro- emulsions were subjected to a comprehensive characterization, including drug content, pH, particle size, zeta potential, conductivity, viscosity, in vitro diffusion and ex vivo permeation studies.The optimized formulation showed 99.5 ± 0.25% drug content, indicating high drug within the formulation. The results indicated the stability of the formulations, lowering the possibility of particle aggregation, and showed that the optimized microemulsion exhibited transparency with an average droplet size of 517 nm and zeta potential of -15.1 mV. The negative zeta potential indicated the stability of the formulations, reducing the chances of particle aggregation. The drug content in the optimized formulation was found to be 99.5 ± 0.25%, indicating the system& #39;s suitability for high drug within the formulation. Drug permeation from the optimized formulation was determined to be 97.43%.

Keywords: Zafirlukast, Quality by design, microemulsion, Polyethylene glycol, Tween80

CQR 38

PSYCHEDELIC DRUG THERAPY: UNVEILING THE PROMISING THERAPEUTIC BENEFITS AND NAVIGATING THE COMPLEXITIES OF REGULATIONS AND LEGISLATIONS

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Psychedelic drug therapy has emerged as a promising field of research in recent years due to the significant potential therapeutic benefits across various mental health conditions such as depression, post-traumatic stress disorder, anxiety, addiction, etc. The present work examines the therapeutic potential of psychedelic substances. Also, it provides an overview of the regulations and laws surrounding psychedelic drugs in most countries. The present work highlights the classification of psychedelics as Schedule I controlled substances that are restricted for medicinal use because of their high potential for misuse. The United States Food and Drug Administration currently monitors psychedelics by scrutinizing the data submitted by sponsors and investigating the process of clinical trials. The European regulators are highlighted for researching atypical psychedelics in treating mental disorders and the challenges in developing psychedelic therapy, including safety and efficacy. Expedited pathways in the United States and Europe offer benefits and criteria for quicker evaluation and approval of psychedelic drugs, ensuring ongoing safety monitoring and risk/benefit analyses. Health Canada has implemented guidelines for regulating psychedelic therapy studies, emphasizing the importance of risk management protocols. The Dutch government's proactive approach and significant funding for mental healthcare research, including psychedelics and 3,4-Methylenedioxymethamphetamine studies, can facilitate international cooperation and remove research barriers. Australia has recently legalized them to treat some mental health conditions. Psychedelic drugs are technically illegal in India with strict regulations and severe punishments. Government support and funding are needed to promote acceptance, eliminate underground therapists, and advance research on psychedelic therapy for better human welfare.

Keywords: Therapy, United States

CQR 39

FORMULATION AND EVALUATION OF TABLETS FROM PHYLLANTHUS NIRURI L. PLANT BY USING COLD COMPRESSION METHOD

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The aim of the present study was to formulate and evaluate cold compressed tablets from Phyllanthus niruri L. Phyllanthus niruri is an ayurvedic herb. It is also known as Bhumi amla, Bhui amla (Nela usiri).The plant is popular in folk medicines for it's medical properties. Whole plant,fresh leaves, stem,fruits and roots are used in the treatment of various diseases particularly hepatitis,viral infections,gastric problems,cancer diseases,reduce the kidney stones. Phyllanthus niruri plant was collected. Seperate the leaves and fruits. After thoroughly shade dried,powder it and pass through the sieves to get a fine powder. Then mixed with superdisintegrants cross povidone,binders polyvinyl pyrrolidine, lubricants talcum powder and starch and preservatives. Sodium benzoate, sodium methyl paraben, sodium propyl paraben. Performed pre formulation studies like flowability, compressivility, bulk density, truedensity. Prepare the different formulation tablets with different concentrations of superdisintegrants by cold compression method and evaluated for it's Weight uniformity (mg), Thickness (mm), Diameter (mm), Hardness (N), Friability (%) and Disintegration time (min).

Keywords: Phyllanthus nirius, crosspovidone,polyvinyl pyrrolinde.

CQR 40

FORMULATION AND IN-VITRO CHARACTERIZATION OF CHRONO THERAPEUTICS DRUG DELIVERY SYSTEM

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Chrono formulation and time-release technologies are revolutionizing pharmaceutical drug delivery by aligning medication release with the body's biological rhythms. This approach optimizes drug absorption, metabolism, and action, particularly beneficial for conditions like rheumatoid arthritis, hypertension, and asthma, which exhibit circadian variations. Innovative time-release mechanisms, like controlled-release tablets and pulsatile release systems, allow for precise control over drug release profiles, maximizing therapeutic benefits and minimizing side effects. Chrono formulated NSAIDs have shown promise in reducing morning stiffness and pain in arthritis patients. In vitro studies show the feasibility of targeting release profiles in drugs. Tailoring drug release to the body's natural rhythms improves patient outcomes, but challenges include design complexity and patient adherence to dosing regimens.

Keywords: Time-release technologies, biological rhythms, rheumatoid arthritis, hypertension, and asthma.

CQR 41

ASSESSING THE RECENT PARAGRAPH IV CERTIFICATION FILINGS AND THE IMPACT OF THE BLOCKING ACT ON GENERIC APPROVALS

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The certification under Paragraph IV permits generic organizations to enter the market while a brand drug patent is still in effect. This mechanism was established by the Hatch-Waxman Act to balance pharmaceutical entry and innovation incentives like various statutory provisions such as patent term restoration and different exclusivities. This article delves into challenges such as patent settlement (commonly known as pay-for-delay) and concerns surrounding the BLOCKING Act, (The Bringing Low-cost Options and Competition While Keeping Incentives for New Generics Act) which may potentially impede rather than expedite the entry of generic medication in the market. Furthermore, we scrutinize the FDA's recently published Para IV certification list to discern various FDA decisions regarding application statuses. This analysis aims to illuminate critical issues in pharmaceutical market dynamics and regulatory practices. The complexities surrounding generic drug entry and the ever-evolving landscape of patent protection underscore the need for comprehensive understanding and proactive measures to ensure equitable access to affordable medication while fostering innovation. This article work contributes to the ongoing discourse on enhancing the efficiency and fairness of the pharmaceutical market for the benefit of both consumers and industry stakeholders.

Keywords: 180 day exclusivities, generic approvals, para IV filings, BLOCKING act.

CQR 42

HARNESSING AYURVEDIC WISDOM: PAPAYA LEAF EXTRACT JELLIES FOR DENGUE RELIEF

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Ayurveda, the ancient "science of life," is one of the oldest medicinal systems, originating over 5,000 years ago in India. Emphasizing the balance of mind, body, and spirit for optimal well-being, Ayurveda's principles are increasingly recognized worldwide. Plants have been essential in healthcare for millennia, with around 80% of the global population relying on them. India, home to approximately 45,000 medicinal plant species, showcases the vast potential of natural remedies. These remedies often offer advantages over synthetic drugs, such as cost-effectiveness and minimal side effects, supported by numerous studies.Severe dengue, a life-threatening illness, peaks during the monsoon season, necessitating effective symptom management as no direct cure exists. Preventing mosquito bites is critical. Carica papaya Linn., native to Central America and common in India, holds significant medicinal value. Papaya leaf extract has shown promise in increasing platelet counts, beneficial for dengue patients. Studies highlight its ability to enhance platelet production and inhibit viral assembly protease. Innovatively, papaya leaf extract is now included in edible jellies, facilitating easy administration and improving patient compliance, especially among vulnerable groups. Suitable gelling agents for these jellies include gelatin, agar-agar, pectin, or modified starch, making them a convenient medication form, particularly for pediatric or geriatric patients.

Keywords: Ayurveda, Dengue, Papaya Leaf Extract, Medicinal Plants, Natural Remedies

CQR 43

INNOVATING PERSONALIZED MEDICINE: A REVIEW OF AI DESIGNED 3D-PRINTED CUSTOMIZED CAPSULES.

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Personalized medicine involves customized drug delivery to cater to individual needs. In this review, we study an innovative method that combines AI and 3D printing technology to design and create multi-layer capsules with controlled drug release profiles. Capsules (20mm x 10mm) were modeled and their geometry was encoded for simulation using a classical drug dissolution model. The model's accuracy was tested experimentally. A genetic algorithm helped to optimize the capsule's internal structure to achieve desired drug release patterns (e.g., stepwise or zero-order). FDM 3D printing was used to make capsules designed by the AI for the model drugs isoniazid and acetaminophen. The in vitro release profiles of the printed capsules closely matched the target profiles ($f2 > 50$), demonstrating the ability of 3D printing to accurately manufacture the AI-designed multi-layer capsules. These targeted release profiles were achieved only by modifying the capsule geometry, not the drug itself. This approach offers promise in developing customized oral medications with precise drug release for various therapeutic needs. The ability to tailor capsule design based on individual patient requirements has the potential to improve treatment effectiveness also reduce possible side effects hence revolutionizing pharmaceutics.

Keywords: 3-D printing technology, Artificial Intelligence, Personalized medicine, Customized Capsules.

CQR 44

NANOMEDICINE AND DRUG DELIVERY – SMALL PARTICLES FOR BIG PROBLEM

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Mankind is still fighting against a high number of serious and complex illnesses like cancer, cardiovascular diseases and diabetes. Nanomedicine, raises high expectations for millions of patients for better, more efficient healthcare and has the potential of delivering promising solutions to many illnesses. Nanomedicine is an interdisciplinary field that combines nanotechnology and medicine. It is an exciting and rapidly evolving field that merges nanotechnology with medicine to develop novel therapies and improve existing treatments. It involves the use of nanoscale materials, such as nanoparticles, nanorobots, or nanoscale devices for better diagnosis and treatment. Nanoparticles can be engineered to target specific cells, tissues, or organs by functionalizing their surfaces with ligands or antibodies that recognize and bind to receptors or biomarkers present on the target cells. This targeting ability enhances the accumulation of drugs at the desired site, thereby increasing therapeutic efficacy and reducing systemic toxicity. Nanoparticles also protect drug from degradation by encapsulating drug molecules and deliver them to target sites with precision. In drug discovery, nanoparticles serve as carriers for poorly soluble compounds or molecules that require protection from degradation. This illustrates the potential of nanomedicine in revolutionizing treatment by precisely targeting the cells. Nanomedicine offers a promising avenue for enhancing therapeutic outcomes while minimizing side effects.

Keywords: Nanoparticles, nanotechnology, targeted cells, drug delivery

CQR 45

DEVELOPMENT, OPTIMIZATION VIA BOX BEHNKEN DESIGN AND CHARACTERIZATION OF SOLID-LIPID NANOPARTICLES OF LETROZOLE FOR IMPROVING THE ANTI-CANCER ACTIVITY FOR THE TREATMENT OF BREAST CANCER

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Breast cancer is the predominant form of cancer in females, exerting a substantial impact on global mortality. Hormone receptor-positive breast cancer is the most common kind of breast cancer that relies on hormones for its proliferation. Letrozole, a third-generation non-steroidal aromatase inhibitor, is commonly employed for the prevention of hormone receptor-positive breast cancer. Letrozole is authorized and commercially available in the form of a standard tablet. One significant obstacle of traditional chemotherapy is its lack of specificity, resulting in poor target cellular accumulation that eventually leads to various adverse effects and drug resistance, which ultimately narrows down the effectiveness of the treatment. Hence, it is recommended to employ an innovative delivery approach for administering letrozole.The Present study focused on encapsulating LTZ into solid lipid nanoparticles (SLNPs) to enhance its specificity by targeting accumulation of intended drug into target cancer cells. solid lipid nanoparticles offer a promising platform for developing nanoformulations to target breast cancers. Their ability to encapsulate various drugs, facilitate targeted drug delivery, and provide controlled release makes them a versatile option for improving the efficacy of anticancer therapies while minimizing adverse effects. The solid lipid nanoparticles containing LTZ were synthesized using hot homogenization approach which were subsequently subjected to probe ultrasonication. LTZ-SLNPs were developed using the box behnken design. The selected independent variables for this study comprised lipid ratio (X1), concentration of surfactant (X2), and homogenization speed (X3). The impact of the intervention was evaluated with respect to the dimensions of the particles (Y1), the degree of entrapment efficiency (Y2), and the percentage of drug loading (Y3). The design exhibited a total of 17 formulation runs, with three specific compositions referred to as centre points. An evaluation was conducted to determine the physicochemical properties of all seventeenSLNPs formulations loaded with LTZ. The average diameter of LTZ loaded SLNPs ranged from 137.3 $\pm$ 8.3 to 159.6 $\pm$ 7.7 nm, while the Zeta potential of different PLGA nanoparticles loaded with LTZ ranged from -21.5 $\pm$ 2.8 to -19.5 $\pm$ 2.1. The experimental results showed a distinct link between the zeta potential and particle size, indicating the successful optimization of the technique. In vivo evaluation further demonstrated the superior anticancer effects of LTZ-SLNPs 5 by inhibiting tumor growth compared to free LTZ and commercially available Letroz in an established MCF-7 xenograft mice model. LTZ-SLNPs 5 showed about 1.6 times higher and 2.9 time higher tumor growth inhibition rate than free LTZ and commercial dose of letrozole.

Keywords: Breast cancer, Letrozole, solid lipid nanoparticles, box behnken design.

CQR 46

FORMULATION AND EVALUATION OF TOPICAL GEL BY ENHANCING SKIN PERMEATION OF ANTI-FUNGAL DRUG ITRACONAZOLE

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Itraconazole is an imidazole derivative and used for the treatment of local and systemic fungal infection. The oral use of Itraconazole is not much recommended as it has many side effects. Commercially Itraconazole topical gel preparation are not available in the market, thus this formulation is made for better patient compliance and to reduce the dose of drug and to avoid the side effects like liver damage and kidney damage. The gel was formulated by changing the polymer ratio. FT-IR study confirmed the purity of drug and revealed no interaction between the drug and excipients. Gel formulations were characterized for drug content, pH determination, viscosity measurement, in vitro diffusion, antifungal activity and skin irritation. Among the five formulations, F1 was selected as the best formulation as its %CDR after 4½ h was 97.846% and release rate of drug from F1 formulation is best fitted to Higuchi model. The viscosity of the F1 formulation was within the limits and F1 formulation did not show any skin irritation. Gel formulation F1 was found to be stable at 30 ±2°C and 65 ± 5 RH. It was found that at 40 ± 2°C and 75 ± 5 RH the gel formulation was not stable and %CDR was decreased. Efficient delivery of drug to skin application was found to be highly beneficial in localizing the drug to desired site in the skin and reduced side effects associated with conventional treatment

Keywords: Itraconazole, carbopol 971 P, noveon AA1, antifungal.

CQR 47

SOLUPLUS® BASED AMORPHOUS SOLID DISPERSIONS: AN EXPERIMENTAL APPROACH TO AMELIORATE THE SOLUBILITY AND ANTI-RETROVIRAL INTEGRASE ACTIVITY OF DOLUTEGRAVIR IN RABBITS.

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Dolutegravir (DTG) is an integrase strand transfer inhibitor that prevents the integration of viral DNA into host cell DNA. This study aimed to improve the oral bioavailability and dissolution (%) of Dolutegravir (DTG) in rabbits by creating an amorphous solid dispersion (SD) with amphiphilic polymer soluplus®. The lyophilization method was used to develop DTG-SD formulations with various ratios (1:1,3:7,2:3 and 1:4) of DTG: polymer. Optimized formulation was characterized using Fourier transform infrared spectroscopy (FTIR), differential scanning calorimetry (DSC), X-ray diffraction (XRD), and morphological studies done by scanning electron microscopy (SEM). The developed optimized formulation was also investigated for pharmacokinetic parameters using rabbit animal models. DTG amorphous solid dispersions (68760 µg/ml) show greater solubility than pure DTG (192 µg/ml). FTIR studies show compatibility between the DTG and the selected polymer; DSC and XRD results give crystalline changes of DTG; Surface morphology shows that Pure DTG has a crystalline prismatic shape, and the prepared solid dispersions have an amphiphilic carrier that forms irregularly spherical-shaped particles, i.e., carrier forms coat around DTG crystals. Pharmacokinetic parameters show greater bioavailability than compared to the pure DTG. Based on the above results, it was concluded that amorphous solid dispersions are helpful to ameliorate the solubility and anti-retroviral integrase activity of the DTG.

Keywords: Amorphous solid dispersions, Ameliorative effect, Bioavailability, Lyophilization, and Soluplus®.

CQR 48

PREPARATION AND EVALUATION OF DOMPERIDONE FAST DISSOLVING FILMS FOR PAEDIATRIC USE

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In present study was to formulate fast dissolving films of domperidone to enhance the ease of administration and compliance by the paediatric patients. Domperidone is a drug of choice for emesis. It causes dopamine D2 blockage at the chemoreceptor trigger zone and at the gastric level. Fast dissolving films will dissolvewithin few seconds when placed in the mouth. Domperidone is bitter in taste therefore taste masking becomes critically important. In the present study taste masking was done by complexing with indion 204. The complexes were prepared by batch technique and optimized for swelling and stirring time. The complex formation was characterized by FTIR and DSC studies. These were further evaluated for taste masking, drug content and invitro drug release. The domperidone-indion 204 complex of 1:5 ratio was incorporated in to the film. The plasticizer propylene glycol concentration 2% was selected on the basis of flexibility, tensile strength and stickiness of the film. Films were evaluated for drug content, it was found to be 91.86 ± 0.14.The dissolution profile, disintegrating time and folding endurance were found to be satisfactory. FTIR and DSC studies showed that there was no interaction between drug and excipients. Further, the optimized films were evaluated in human volunteers for disintegration time and taste,it was found that the films disintegrate in 1 min 17 sec and good mouth feel was reported. Hence the domperidone maltodextrin fast dissolving films were successfully developed and evaluated for its acceptability and suitability.

Keywords: fast dissolving films, domperidone, paediatric patients.

CQR 49

A VERSATILE NATURE OF LIPOSOMES: AN OVERVIEW

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Lipoosomes are Lipid vesicular systems prepared by the Phospholipids and Cholesterols as main ingredients. These are target specific drug delivery systems and provide sustain action.There are number of methods to prepare liposomes based on entrapment efficiency and lamellarity. Due to this versatile nature of liposomes it is used as a Drug delivery system to deliver both aqueous as well as organic soluble drugs to the site of action. Liposomes applications are not limited as drug delivery system but, also it is used in different fields like dermatology to deliver the drugs through skin membrane for local action. To modify the Pharmacokinetic factors of the Nutritions, the liposomes are the best suitable option. This liposomal applications are not only limited to medical field it is extended to other fields like Textile industry as textile preparation and dyeing. Usage of liposomes in cosmetic industry has enormously increased due to cross over the barrier nature of skin by giving in the form of liposomes. As per this review we made an attempt to discuss in detail about liposomal preparation methods and applications in various fields to prove its versatile nature.

Key words: Liposomes, Nutritions, Phospholipids, Lamellarity.

CQR 50

INTERNET OF THINGS IN THE PHARMA INDUSTRY FOR AUTOMATION OF MANUFACTURING DRUG DISCOVERY AND REMOTE MONITORING OF PATIENTS

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With the evolution of the fifth-generation (5G) wireless network, the Internet of Things (IOT) has become a revolutionary technique that enables a diverse number of features and applications. It can able a diverse amount of devices to be connected in order to create a single communication architecture. The key features required for employing a large - scale IOT is low-cost sensors, high-speed and error-tolerant data communications, smart computations, and numerous applications. It is estimated that by 2020, there will be 50 billion connected devices, and in five years, 80% of companies are expected to utilize IOT in their digitized firms. IOT revolutionizes the pharmaceutical sector by providing and automating pharmaceutical manufacturing, discovery of drugs and remote monitoring of patients and more. Digitization holds tremendous potential to help pharma companies address various challenges. This chapter intends to provide an insight of Internet of Things in Pharmaceutical sectors

Keywords: IoT, Pharmaceutical Manufacturing, Drug Discovery, Clinical Trials.

CQR 51

INVESTIGATING INORGANIC SILICA NANOMATERIALS AS DRUG DELIVERY SYSTEMS IN DEVELOPING SOLID ORAL CONTROLLED RELEASE DOSAGE FORMS

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In this current project study inorganic silica nanomaterial SBA-15 an ordered mesoporous silica nanoparticle which is hexagonal in shape was selected as carrier material to formulate solid oral controlled release dosage forms as Matrix tablets owing to its versatile applications in pharmaceutical, agricultutal and biomedical applications. The present objective was to investigate the carrier potential of this nanomaterial with already known controlled release polymers like HPMC (synthetic) and Sodium alginate, gum tragacanth (natural polymers) in combination were formulated as matrix tablets and compared, using model drug belonging to BCS class II paracetamol (PCL). They were further studied for drug release kinetics after loading with PCL.the prepared Matrix tablets were studied for precompression and post compression parameters along with biocompatibility studies using FTIR, SEM analysis were done to study surface morphology and compared with loading of PCL and without loading of PCL at 5um,10um and 200um. The results have shown that all the parameters were within the acceptance limits and it can be concluded that these inorganic silica nanomaterials can be further developed into solid oral controlled release dosage forms where drug release kinetics can be improved enhancing quality of life of patients

Keywords: Inorganic Silica Nanomaterial, Matrix Tablets, SBA-15.

CQR 52

DESIGN, OPTIMIZATION AND PHARMACOKINETIC EVALUATION OF PIRIBEDIL LOADED NANOSTRUCTURED LIPID CARRIERS DISPERSED IN NASAL IN SITU GELLING SYSTEM FOR EFFECTIVE MANAGEMENT OF PARKINSON'S DISEASE

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Parkinson's disease (PD) is a progressive neurodegenerative disorder that primarily affects motor function. Effective management of PD often requires delivering therapeutic agents directly to the brain, bypassing the blood-brain barrier. This study explores the design, optimization, and pharmacokinetic evaluation of Piribedil-loaded nanostructured lipid carriers (NLCs) dispersed in a nasal in situ gelling system to enhance brain delivery and improve the therapeutic efficacy of Piribedil. Piribedil-loaded NLCs were prepared using a high-shear homogenization followed by ultrasonication technique. Compritol 888 ATO and Capryol 90 were selected as the solid and liquid lipids, respectively, while Poloxamer 188 and Tween 80 were used as surfactants. The NLCs were characterized for particle size, zeta potential, encapsulation efficiency, and drug loading capacity. The optimized NLCs were then dispersed in a nasal in situ gelling system using Pluronic F-127 and Carbopol 934. The optimized NLCs exhibited a particle size of 150 ± 10 nm, a zeta potential of -25 ± 2 mV, and an encapsulation efficiency of 85 ± 5%. The drug loading was found to be 14.5 ± 1%. The in situ gel formulation displayed appropriate gelation temperature and mucoadhesive properties, ensuring prolonged residence time in the nasal cavity. In vitro release studies showed a sustained release profile of Piribedil from the NLCs over 24 hours. Moreover, the nasal formulation showed a quicker onset of action, which is crucial for managing PD symptoms. The Piribedil-loaded NLCs dispersed in a nasal in situ gelling system represent a promising approach for the effective management of Parkinson's disease.

Keywords: Parkinson's disease, Nasal in situ gelling system, Piribedil, Sustained release, Nanostructured lipid carriers.

CQR 53

MICRONEEDLES: ADVANCING TRANSDERMAL DRUG DELIVERY WITH EFFICIENCY AND COMFORT

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Microneedles (MNs) are microscale physical enhancements designed to improve transdermal and intradermal drug delivery. These microneedles offer several advantages over traditional delivery methods, such as minimal invasiveness, ease of use, and good biocompatibility. They enable the direct delivery of various therapeutics, including small molecule drugs, macromolecular drugs like proteins and vaccines, and chemotherapeutic agents, directly to the skin.The benefits of microneedles include the ability to create pathways through the skin, enhancing drug penetration and bioavailability by bypassing the stratum corneum. This results in more efficient drug delivery to the epidermis or upper dermis region. Metallic microneedles, in particular, can provide continuous drug delivery without causing pain, making them a promising alternative to traditional hypodermic needles.Microneedles can be tailored in design and formulation to control the dose and release rate of drugs, offering versatility in drug delivery applications. They can be fabricated using various materials such as polymers, which are known for their biocompatibility, and inorganic materials like silicon and ceramics for their mechanical strength. Techniques like MEMS lithography, micro molding, and UV lithography are used to create precise microneedle arrays.Applications of microneedles include delivering chemotherapeutic agents to superficial tumors, improving drug stability and delivery efficacy, and enhancing patient compliance. Additionally, microneedles are utilized in immunotherapies and vaccines, offering targeted delivery and reduced systemic toxicity. Overall, microneedles represent a significant advancement in drug delivery technology, providing a minimally invasive and effective approach for a wide range of therapeutic applications.

Keywords: Microneedles,Transdermal Drug Delivery System,Novel Drug Delivery System,Patient Compliance, Smart Designs.

CQR 54

EXPLORING THE ENIGMATIC ROLE AND REGULATORY LANDSCAPE OF BIO-BETTERS IN THE UNITED STATES AND EUROPE

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Biologics, comprising complex molecules derived from living organisms, have revolutionized healthcare but face patent expiration, necessitating alternatives like biosimilars. However, biosimilars, though more affordable, encounter challenges like immunogenicity and efficacy differences. Bio-betters developed with a few modifications offers enhanced efficacy and better safety profiles. Exploring bio-betters' efficacy and modification techniques, positioning them as superior alternative, also examines approved bio-better products in the highly regulated countries such as United States (US) and the Europe (EU), showcasing their value addition. Further, the present work investigates the discontinued bio-betters and delves into finding the underlying reasons. Furthermore, utilizing the European regulatory database (EudraVigilance) and FDA adverse event reporting (FAERS) for adverse event reporting, the bio-betters with biologics and biosimilars, revealing lower adverse effects, thus emphasizing their enormous efficacy. Recognizing this, healthcare providers must be educated about bio-betters' benefits for informed decision-making and business strategies. Bio-betters' patentability and exclusivity in the US and EU present lucrative opportunities, yet regulatory hurdles, particularly under the 351(a) pathway, hinder their market entry. Hence, advocating for regulatory reforms to expedite approval processes and reduce costs is imperative for maximizing bio-betters' potential in improving patient outcomes and fostering business growth.

Keywords: Bio-betters, Modification Techniques, FAERS, EudraVigilance, regulatory pathway

CQR 55

DRUG-DEVICE COMBINATION PRODUCTS: REGULATORY INSIGHTS IN THE US AND EUROPE AND A FRAMEWORK PROPOSAL TO INDIA

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Drug-device combination products represent a significant advancement in the medical field, integrating drugs or biologics with specialized medical devices for targeted delivery within the body. This integration offers precise therapeutic or diagnostic benefits by improving efficacy and minimizing systemic side effects. These products expand therapeutic options and enhance patient compliance, necessitating collaborative regulatory oversight between agencies responsible for drugs, biologics, and medical devices. This research investigated the regulatory frameworks governing such products in the US and Europe. Both the US and EU have well-established frameworks for marketing drug-device combination products. Critical insights into regulatory approaches in these regions were identified through a comprehensive analysis of regulatory guidelines and a literature review. In India, these products are regulated as drugs or biologics under the Drug & Cosmetic Act-1940, Drug & Cosmetic Rules-1945, and NDCT Rules-2019 or as devices under MDR-2017. However, there is no specific regulatory framework for drug-device combination products, posing challenges for manufacturers seeking approval from the CDSCO. Based on insights from regulated markets, a possible regulatory framework was suggested for India to enhance regulatory clarity, efficiency, and patient safety. This study aims to promote innovation in the Indian healthcare industry by streamlining the approval process for combination products through the implementation of a dedicated framework.

Keywords: Drug-device, regulatory, Cosmetic Rules-1945.

CQR 56

THERAPEUTICAL POTENTIAL OF NEUTRACEUTICALS IN THE PREVENTION AND MANAGEMENT OF ALZHEIMERS DISEASE

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Alzheimer disease (AD) is a long-term brain neurodegenerative condition. Approximately 55 million individuals worldwide currently suffer from dementia, and the number of Alzheimer disease sufferers is estimated by the WHO projects that it will serve over 78 million people globally by 2030 and almost 139 million by 2050. In recent years, nutraceuticals—a supplement to contemporary medicine that provides health benefits—have become more and more well-known. It would be feasible to lessen or completely do away with the need for prescription drugs by taking nutraceuticals, which would lower the likelihood of any negative side effects. Often, nutraceuticals have special chemical properties that arent seen in medications. Treatments aim to modify Alzheimer disease by targeting β-amyloid (Aβ), yet inadequate permeability makes medication usage against Alzheimer disease difficult. Other medications, such as cholinesterase and NMDA-receptor antagonists. Combining inhibitors only results in momentary symptom alleviation. Discussion: Nutraceuticals are being researched to potentially slow down the progression of dementia. This study examines medicinal nutraceuticals that may be useful in themanagement of Alzheimer disease.

Keywords: Nutraceuticals, dietary supplements, vitamins, nutrients, medical foods, phytochemicals, Alzheimer's disease.

CQR 57

FORMULATION AND EVALUATION OF ESOMEPRAZOLE MAGNESIUM TRIHYDRATE MUCOADHESIVE BUCCAL TABLETS

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Esomeprazole magnesium trihydrate is an anti-ulcerative agent (proton pump inhibitor) which is used in treating gastro esophageal reflux disease. The main objective of the study was to formulate and evaluate bioadhesive buccal tablets to overcome the degradation in the acidic media of gastrointestinal tract, and to avoid the first pass metabolism in liver. The buccal delivery is defined as the drug administration through the mucosal membranes lining the cheeks and lips (buccal mucosa).The future challenge of pharmaceutical scientists is to develop effective non-parenteral delivery of intact proteins and peptides to the systemic circulation. Based on our current understanding of biochemical and physiological aspects of absorption and metabolism of many biotechnologically produced drugs, they cannot be delivered effectively through the conventional oral route Bioadhesive buccal tablets were prepared by direct compression method using bioadhesive polymers like Xanthan gum, Chitosan, guar gum and hydroxy propyl methyl cellulose E-15 in different ratios. The physicochemical compatibility of drug and polymers was studied by FT-IR spectroscopy. Prepared tablets were evaluated for permeation study through buccal mucosa, in vitro drug release, bioadhesion strength, swelling index, moisture absorbance, surface pH, ex vivo residence time. Among the prepared formulation containing guar gum found optimized formulation which showed the higher flux than the pure drug solution. In vitro percentage drug release of optimized formulation was 98.32% $\pm$ 0.23 at the end of 6 hours. The values of percentage drug release put in kinetic data, it followed Higuchi model.

Keywords: Bioadhesive buccal tablet, Chitosan, Esomeprazole, Guar gum, Xanthan gum.

CQR 58

FORMULATION AND EVALUATION OF LOSARTAN POTASSIUM BILAYER FLOATING TABLETS

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The controlled release drug delivery systems (CDDS) owning the capacity to be engaged in the stomach remain entitled as Gastro Retentive Drug Delivery Systems (GRDDSs), then both retain aid in enhancing the oral precise release of medications through unremittingly discharging drug afore absorption window designed for an extended period. The paper aimed to progress an ideal gastro retentive drug delivery system intended for directing Losartan potassium as a fixed-dose for anti-hypertensive therapy. The bilayer tablets were primed through direct compression method. Losartan was formulated by means of a floating layer expending hydrophilic swellable polymer Hydroxy Propyl Methyl Cellulose E15, ethyl cellulose as a buoyancy enhancer, sodium bicarbonate as a gas forming agent. The clout of experimental factors such as swelling agent concentration, buoyancy enhancer and gas generating agent on floating lag time, total floating time, drug release remain investigated to get optimized formulation. All the formulations showed the Korsemeyer-Peppas model as the best fit model. The immediate-release layer stood optimized using crospovidone as a super disintegrant. Optimized formulation evaluated for two layers with wt variation, disintegration, drug content and drug release of 97.3%.

Keywords: Bi-layer floating tablets, Optimization, Superdisintegrants, Drug delivery.

CQR 59

FORMULATION AND EVALUATION OF FLUVOXAMINE MALEATE FAST DISSOLVING ORAL FILMS

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Oral drug delivery is the most preferred route and remains acclaimed to date. The oral fast- dissolving film is one of the novel drug delivery systems that increases patient acceptance for rapid dissolution, and self-administration and is beneficial for individuals who have difficulty in swallowing pills such as children and the elderly. Many drugs can be delivered as mouth- dissolving films for example neuroleptics, antidepressants, cardiovascular, antihistamines, analgesics, anti-asthmatic, and drugs for erectile dysfunction, etc. Fast dissolving films are garnering significant interest as an alternative fast dissolving tablets. Leaves minimal or no residue in the mouth often administration. These films are designed to rapidly disintegrate upon contact with a moist surface, such as the tongue, within seconds, thereby eliminating the need for additional liquid for administration. This attribute not only offers a strategic marketing advantage but also enhances patient adherence. The objective of present investigation is to develop the fast dissolving oral films of fluvoxamine maleate to attain quick onset of action for the better management of depression. Oral films were fabricated through the solvent casting technique employing HPMC (Hydroxypropyl Methylcellulose) variants E3, E5, and E15 as film-forming agents, along with propylene glycol and PEG 400 as plasticizers. The mechanical characteristics, disintegration, and in vitro dissolution of these films were assessed. Optimized formulation is evaluated and shows with a maximum tensile strength , highest drug release, with maximum content uniformity folding endurance and least disintegration time. It is evident from the above results that the developed formulation can be an innovative dosage form to improve the drug delivery, quick on set of action, as well as, improve patient compliance in the effective management of depression.

Keywords: neuroleptics, antidepressants, cardiovascular, antihistamines, analgesics, dysfunction, solvent casting, plasticizers.

CQR 60

DESIGN, OPTIMIZATION AND EVALUATION OF CARVEDILOL FAST DISSOLVING TABLETS EMPLOYING STARCH HUMATE – A NEW MODIFIED SUPERDISINTEGRANT.

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Fast dissolving tablets are solid dosage forms immediate drug release, enhanced bioavailability, and improved patient compliance. These tablets, which disperse or dissolve in the oral cavity within seconds without the need for water, making them ideal for patients with swallowing difficulties offer a convenient and effective drug delivery system. The present research focused on the modification of starch obtained from sorghum grains. An evaluation was conducted on the modified starch-humate phytochemical studies, along with an assessment of the physicochemical characteristics. Carvedilol, a BCS Class II group due to its poor solubility, was opted as the focus for enhancing its dissolution kinetics, a critical factor influencing its overall absorption rate. FTIR shows no interaction between carvedilol and new superdisintegrant. XRD shows exhibited very small diffuse peaks with a few intense peaks, implying its non-crystalline nature. Therefore, starch humate was employed as the superdisintegrant in the development of carvedilol fast-dissolving tablets using the direct compression method. The current research implemented a 23-factorial design to enhance the levels of independent variables (starch humate, sodium starch glycolate, and crospovidone) that influence dependent variables (disintegration time and percent released in 10 minutes) within the formulation. The results suggested that a 5% concentration of starch humate yielded the best outcomes for the creation of carvedilol fast dissolving tablets. Hence, a novel modified starch humate has surfaced as a promising superdisintegrant in fast dissolving tablets to enhances the dissolution rate of poorly soluble medications.

Keywords: Carvedilol, poorly soluble, new superdisintegrants, factorial

CQR 61

EMPOWERING ARTHRITIS PATIENTS: OPTIMIZED DRUG DELIVERY THROUGH PIROXICAM MICROSPHERE-EMBEDDED SCAFFOLD IMPLANTS VIA BOX-BEHNKEN EXPERIMENTAL DESIGN

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This study endeavors to develop and appraise an innovative implantable drug delivery system with the integration of NSAID-loaded gelatin microcapsules into a gelatin scaffold, designed to augment drug delivery efficiency and sustain medication release. Piroxicam-loaded microspheres with a 1:1 ratio of poly lactic acid and poly lacto glycolic acid showed smaller particle size, good yield, entrapment efficiency, and release. They were selected to make gelatin scaffolds with Box Behnken Design using Design Expert software for optimization. The better scaffolds were made in the form of rod-shaped implants. The primary focus of the investigation centered on the evaluation of critical parameters, specifically entrapment efficiency and drug release properties, both vital for their potential biomedical utility.Microspheres with a 1:1 ratio of PLA and PLGA showed smaller particle sizes, good yield, entrapment efficiency, and release. Notably, the software-driven optimization yielded highly favorable results for the scaffolds, as evidenced by a desirability factor closely approaching one across all assessed variables. Furthermore, the scaffolds exhibited favorable physicochemical characteristics, underscoring their versatility for anextensivekind of biomedical claims. The implants were found to have good physicochemical assets including drug release for an extended period.The study concludes that the prepared implants (holding scaffolds impregnated with piroxicam-loaded microspheres) exhibit exceptional entrapment efficiency and finely tuned drug-release properties

Keywords: Entrapment, Microcapsules, Piroxicam, Release, Scaffolds,

CQR 62

ENHANCED TRANSDERMAL DELIVERY OF CILNIDPINE VIA ULTRADEFORMABLE VESICLE LOADED PATCH: STATISTICAL OPTIMIZATION, CHARACTERIZATION AND PHARMACOKINETIC ASSESSMENT

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The study aimed to address the limitations of oral delivery and enhance the bioavailability of Cilnidipine (CND) through the development of transdermal patches containing ultra-deformable transferosomes CND, known for its low oral bioavailability and adverse effects, was encapsulated in transferosomes using a thin film hydration method. Seventeen formulations were made (using Box Behnken Design), varying Soya lecithin, Tween-80, and rotary evaporator'sspeed, and evaluated for vesicle size, polydispersity index (PDI), and entrapment efficiency (EE %). The better formulation was selected based on these parameters and incorporated into transdermal patches. Physicochemical properties, in-vitro and ex-vivo permeation, and skin irritancy studies were conducted on the patches. The results showed that transferosomes with vesicle sizes ranging from 185nm to 401nm and EE% from 63% to 92%, with zeta potential ranging from -52MV to -20MV. In vitro and ex-vivo permeation studies indicated superior drug permeation for transferosomal formulations compared to plain Cilnidipine patches, with permeation directly proportional to PEG-400 concentration. The transferosomal patches were free from skin irritation. The studytr concludes that the transferosomal patches of CND offer a promising approach for effective transdermal delivery, potentially improving hypertension management for prolonged periods in a controlled manner that helps in improving hypertension management.

Keywords: Cilnidipine, Drug permeation, Hypertension management, Transdermal patches, Transferosomes.

CQR 63

FORMULATION AND CHARACTERIZATION OF CHRYSIN LOADED MICROSPHERES AS FLOATING TABLETS

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The convenient and highly compliant route for the delivery of active pharmaceutical ingredients is the tablet. The study aimed to prepare floating tablets of Chrysin to improve its oral bioavailability. Chrysin, is a bioactive compound also called 5,7-dihydroxy flavone obtained in flowers of Passiflora cearulia and Passiflora incornata family Passifloraceae possesses therapeutic potential for various medical problems like inflammation, cancer etc. The bioavailability of chrysin is very less which limits its use as an anti-inflammatory agent. Microspheres are prepared by using Emulsion solvent evaporation method and all the formulations are evaluated by using various methods like SEM, Zeta potential, drug content, entrapment efficiency etc. Among all the formulations, F1 was found to be optimum and the same formulation is incorporated into floating tablets. The selected formulation is incorporated into floating tablets by using Direct compression method. Floating microspheres have been gaining attention due to the uniform distribution of these multiple-unit dosage forms in the stomach, which results in more drug absorption and reduced risk of local irritation. Various formulatons of floating tablets are prepared using Tamarind gum, HPMC, Talc, etc. HPMC, Carbopol and Sodium bicarbonate were used as floating enhancers. The prepared tablets were characterized and evaluated for parameters such as hardness, friability, floating properties, dissolution, disintegration time etc. Among all the formulations F3 was found to be optimum which was evaluated by using various characterization techniques. The findings of this study proved that Chrysin microspheres loaded floating tablets as an integrative approach to improve its bioavailability.

Keywords: Chrysin, Passiflora cearulia, Emulsion solvent evaporation method, SEM, Floating tablets, bioavailability.

CQR 64

IMPACT OF TELEPHARMACY SERVICES ON MEDICATION ADHERENCE AND HEALTH OUTCOMES

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The term "telepharmacy" indicates a form of pharmaceutical care in which pharmacists and patients are not in the same place and can interact using information and communication technology(ICT)facilities. Telepharmacy has been adopted to provide pharmaceutical services to underserved areas and to address the problem of pharmacist shortage. This paper has reviewed the multi-faceted phenomenon of telepharmacy, summarizing different experiences in the area. Advantages and limitations of telepharmacy are discussed as well. Materials and Methods: A literature analysis was carried out on PubMed, using as entry term "telepharmacy" and including articles on the topic published between 2012 and 2018. Results: The studies reviewed were divided into three categories of pharmacy practice, namely (1) support to clinical services, (2) remote education and handling of "special pharmacies", and (3) prescription and reconciliation of drug therapies. In general, different telepharmacy services were effective and accompanied by a satisfaction of their targets. Conclusions: Nowadays, the shortage of health personnel, and in particular pharmacists, is a challenging Issue that the health systems have to face. The use of a new technology such as telepharmacy can represent a possible option to solve these problems. However, there are unsolved limitations (e.g., legal implications) that make greater diffusion of telepharmacy difficult. Stronger data on the effectiveness of this area of pharmacy care, together with a critical evaluation of its limits, can make actors involved aware about the potentialities of it and could contribute to a larger diffusion of telepharmacy services in the interest of communities and citizens.

Keywords: Telepharmacy, communities, pharmacy care, medication adherence, information and communication technology.

CQR 65

SOLUBILITY ENHANCEMENT TECHNIQUES FOR A POORLY SOLUBLE DRUGS

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Solubility enhancement is key to overcoming bioavailability hurdles for poorly soluble drugs, thereby improving their therapeutic efficacy. This abstract unveils innovative strategies employed in pharmaceutical formulations to tackle the longstanding issue of drug solubility. This work delves into a comprehensive toolbox of approaches for enhancing drug solubility, including micronization, solid dispersions, supercritical fluid techniques, and cryogenic processing. Additionally, it explores strategies like kneading, solvent evaporation, co-precipitation, high-pressure homogenization, self-emulsifying drug delivery systems (SEDDS), and liquid-solid techniques. Furthermore, the potential of sono crystallization, nanotechnology, and the prodrug approach are discussed. A grasp of these solubility-enhancing techniques, including micronization, solid dispersions, and nanotechnology, is a cornerstone for formulators in crafting effective drug delivery systems. By strategically applying these methods, either alone or in concert, researchers can unlock solutions to solubility challenges, propelling advancements in pharmaceutical drug development.

Keywords: sono crystallization, solid dispersions, Nanotechnology, Novel techniques, Prodrug

CQR 66

DESIGN AND DEVELOPMNT OF LIPOSOMAL FORMULATION OF CEFIXIME AN OTC DRUG.

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Cefixime is widely used as prescription and non-prescription medicine. The aim of study, is aimed at developing and optimizing liposomal formulation of cefixime in order to improve its anti-cancer activity, to prepare cefixime liposome using thin lipid film hydration using Rotaevaporator (Mechanical dispersion). Cefixime has mild to moderate anti-cancer activity as DNA binding agent even though it is an antibiotic drug (3rd generation cephalosporin drug), so it has to be formulated as liposome formulation for effective targeting action with minimal side effects. Liposomes are micro particulate lipoid vesicles which are under investigation as drug carriers for improving the delivery of therapeutic agents. Due to new development in liposome technology, several liposome based drug formulations are currently in clinical trial, and recently some of them have been approved for clinical use. In this research liposome formulation of cefixime was Prepared and evaluated for vesicle shape (SEM), drug entrapment efficiency, FTIR analysis. From all the characterizations the entrapment of the drug was found to be as 95.03%.

Keywords: Liposome, cefixime, percentage drug entrapped, FTIR analysis

CQR 67

FORMULATION AND IN VITRO EVALUATION OF GABAPENTIN CONTROLLED RELEASE TABLETS USING NATURAL POLYMERS

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The present research work is an attempt to formulate rate controlled drug delivery system of Gabapentin which is primarily absorbed from stomach, so by increasing the GRT of the drug, the bioavailability can be increased. As the drug is stable in acidic pH and mostly absorbed with in pH 1-3, as the stomach is the major absorption site for the drug. Basing on this fact the drug is made to float in the stomach using the mechanism of buoyancy. The study also includes various evaluation studies of Gabapentin tablet and the effect of processing variables on it. A possible interaction between drug and polymers are also investigated by FTIR and DSC studies. So, the present work has been under taken with the objective of designing and evaluation of floating oral sustained release tablet drug delivery system of Gabapentin by using HPMC K15, sodium carboxy methyl cellulose, Xanthun gum, sodium bicarbonate, citric acid. Lactose, ethyl cellulose etc. Gabapentin is an anti-epileptic drug and also used now-a-days to treat neuropathic pains. It is rapidly absorbed from GIT and plasma half-life is about 5-7 hours. Maintaining steady state concentration of gabapentin is difficult due to its short biological half-life. Conventional dosage forms reside in stomach and intestine for only short period. So there is a need of dosage form that increases residence time of drugs in absorption site. Naturally occurring polymers is preferred for controlled formulation because of its low cost, naturally available, biocompatible and better patient tolerance as well as public acceptance. To overcome this problem the present work is proposed for the controlled release of Gabapentin.

Keywords: Gabapentin, controlled drug delivery system, FTIR and DSC.

CQR 68

DESIGN AND ASSESSMENT OF ORO-DISPERSIBLE TABLETS CONTAINING ATORVASTATIN CALCIUM UTILIZING DESIGN EXPERT

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Atorvastatin calcium is employed to reduce cholesterol levels in the bloodstream and to mitigate the risk of stroke, heart attack, and angina. Classified as HMG CoA reductase inhibitors, it competitively inhibits the enzyme 3-hydroxy-3-methylglutaryl-coenzyme reductase, a pivotal step in hepatic cholesterol biosynthesis, leading to expedited disintegration and enhanced drug release. Oro-dispersible tablets of formulations F1 to F11 were prepared using the sublimation method. Initial trials utilized the super disintegrant Ac Di Sol and the sublimating agent menthol. Optimization of these tablets (F1 to F11) involved varying concentrations of super disintegrant and sublimating agent (Ac Di Sol at 0.5%, 2.75%, and 5%, and menthol at 2.5%, 8.75%, and 15%) to optimize disintegration time, percent friability, and drug release. Design Expert 13 software facilitated optimization via Central Composite Design from Response Surface Methodology, with ANOVA revealing the influence of independent variables on dependent ones. Preliminary findings indicated that formulations containing both Ac Di Sol and menthol exhibited rapid disintegration and increased drug release. The optimized formulation, F8, with 5% Ac Di Sol and 8.75% menthol, achieved a disintegration time of 14 seconds, a friability of 0.88%, and 98.6% drug release. Characterization via Fourier Transform Infrared Spectroscopy (FTIR), Differential Scanning Calorimetry (DSC), and Powder X-ray Diffraction (PXRD) confirmed no interactions between the drug and formulation excipients. Stability studies on the optimized formulations, based on disintegration and dissolution findings, demonstrated good stability.

Keywords: Disintegration, sublimation, optimization, characterization, friability.

CQR 69

A SECRET OF SALUTARY ENVIRONMENT: TOUCHING ON UNUSED PHARMACEUTICAL PRODUCTS

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Pharmaceuticals are essential for human health, but when they enter the environment through various pathways such as excretion after consumption or improper disposal of unused medications, they can pose significant environmental concerns. Detection methods were not developed for all pharmaceuticals that enter the ecosystem. These pharmaceuticals can adversely affect ecosystems and various organisms within them.Various policies are recommended to prevent the creation of household pharmaceutical waste and to ensure environmentally friendly ways of pharmaceutical household waste disposal pharmaceutical consumption, prescribing greener drugs, or designing pharmaceuticals that are benign and easily biodegradable, and market places for redistribution of unused pharmaceuticals.Preventing unavoidable collection and disposal of unused pharmaceuticals are crucial steps in restraining them from entering the environment and causing harm. Pharmaceutical industries play a significant role in this process by implementing various strategies to dispose and minimize unused pharmaceutical products.Minimizing the level of pharmaceuticals in the environment is essential for safeguarding human health, preserving ecosystem integrity, and promoting environmental sustainability. Efforts to address this issue require collaboration and coordination among various stakeholders, including pharmaceutical industries, regulatory agencies, healthcare professionals, environmental scientists, and the public.

Keywords: Unused Pharmaceutical products, Ecosystem, Pharmaceutical Preventive measures.

CQR 70

FORMULATION AND EVALUATION OF EXTENDED RELEASE MATRIX TABLETS OF TENATOPRAZOLE SODIUM USING NATURAL POLYMERS

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The present investigation is aimed to formulate the delayed release matrix tablets of Tenatoprazole sodium with cashew nut tree gum, Okra gum and Xanthan gum and during formulation of the matrix tablets, granules are prepared with drug and polymers and dried and sieved well and were finally enteric coated with AQOAT AS-MF to prevent the tablets from acidic environment. Then the granules are compressed in to tablets. The tablets were evaluated for preformulation studies like angle of repose, bulk density, compressibility index and physical characteristics like hardness, weight variation, friability and drug content. In-vitro release of drug was performed in phosphate buffer solution pH 6.8 for twelve hours. All the physical characters of the fabricated tablet were within acceptable limits. It is cleared through the dissolution profile of Tenatoprazole sodium matrix tablets prepared using different polymers were indicated an increase in the polymer ratio retarded the drug release to a greater extent as evident from the in vitro drug release profile of batches A-3, B-3 & C-3. Therefore, 50% polymer level was found to be ideal for the matrix system. A better sustained drug release i.e 89.7 ± 0.32 % drug release was obtained with the matrix tablet (Batch B-3) made-up of the Okra gum (Drug: polymer ratio = 1:1) than with the cashew nut tree gum and Xanthan gum.

Keywords: delayed release, Tenatoprazole sodium, AQOAT, in vitro drug release.

CQR 71

FORMULATION DEVELOPMENT AND EVALUATION OF VALSARTAN AND HYDROCHLOROTHIAZIDE FILM COATED IR TABLETS

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This study aimed to develop and evaluate immediate release film-coated tablets containing a fixed-dose combination of Valsartan and Hydrochlorothiazide using a two-layered approach. The intra granular layer contained Valsartan along with various excipients, while the extra granular layer contained Hydrochlorothiazide and additional excipients using wet granulation method. Nine different formulations (F1-F9) were prepared and evaluated for various pre-compression and post-compression parameters, as well as in vitro drug release. Formulation F3 exhibited satisfactory physical parameters and achieved a high in vitro drug release of 99%. Comparative analysis with the innovator product, Diovan HCT, revealed a similar release profile for F3. Fourier-transform infrared spectroscopy (FTIR) studies confirmed the absence of any drug interaction. This study underscores the successful development of a formulation with promising release characteristics comparable to the innovator product.

Keywords: Valsartan, Hydrochlorothiazide, Immediate release tablet, Diovan HCT.

CQR 72

ADVANCEMENTS AND FUTURE PROSPECTIVES OF AI AND PRECISION MEDICINE

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Over the next ten years, precision medicine interventions are expected to become more widespread and transform the way services are provided and assessed. One may hypothesize that these shifts will be mostly caused by the intricacy and unpredictability of administering treatments utilizing biomarker data, as well as by the inventive, progressive character of AI-based technologies. Global healthcare systems will have to think about modifying their evaluation procedures and methodologies to account for these developments so they can keep doing thorough analyses of the cost-benefit ratios of novel medical interventions and services.The most challenging problems facing precision medicine, particularly those where nongenomic and genomic determinants, along with data from patient symptoms, clinical histories, and lifestyles, will facilitate personalized diagnosis and prognostication, appear to be best addressed by translational research examining this convergence, according to recent literature.In recent years, there has been a shift in the ability to do several intricate tests on clinical samples with the use of technologies like imaging, mass spectrometry, high throughput sequencing, and microfluidics. With the help of analytics, these technologies have been able to provide a more comprehensive picture of the molecular and cellular changes that underlie a wide range of disorders. They have also turned light on the enormous molecular and cellular diversity that exists between individuals and patients. A more individualized or "precision" approach to medicine has been spurred by these findings. Artificial intelligence and Precision medicine is a rapidly emerging field that promises to complement medical professionals' and consumers' health-related jobs with highly tailored medical diagnostic and therapeutic information.we may be on the brink of a treatment revolution, progress must be considered and reasoned so that One possible framework is proposed for the evaluation of precision treatments.

Keywords: precision medicine, artificial intelligence, personalised treatments.

CQR 73

FORMULATION AND EVALUATION OF CAPTOPRIL BILAYER FLOATING TABLETS WITH NATURAL POLYMERS

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Present study is formulation and evaluations of bilayered Captopril tablets by natural polymers by direct physical compression method using Guar Gum, Xanthan Gum (Natural), Sodium bicarbonates has a gas generating agent. The developed bilayered tablets are evaluated for physicochemical characters, buoyancy in vitro study, drug content, drug dissolution, Kinetic models, and drug stability studies. the results are showing satisfactory and within the limits. The bilayered tablets consisting of CIR3 and CSR4 showing good floating property and drug release was found in a sustained manner for 12 hours and follows Higuchi kinetics. The optimised CIR3 and CSR4 bilayered tablet was more stable at various storage conditions.

Keywords: Captopril; Gaurgum, Xanthan Gum, Buoyancy and bilayered tablet

CQR 74

DEVELOPMENT AND EVALUATION OF DICLOFENAC DIETHYLAMINE EMULGELS ENHANCED WITH ESSENTIAL OILS FOR PAIN MANAGEMENT IN ARTHRITIS

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Arthritis a prevalent chronic condition, which poses significant challenges in pain management. Diclofenac diethylamine, a potent nonsteroidal anti-inflammatory drug commonly used for arthritis pain relief. However, conventional formulations may exhibit limitations such as delayed onset of action and adverse effects. This study aims to formulate and evaluate diclofenac diethylamine emulgel using essential oils for the management of pain in arthritis. Different essential oils like black cumin seed oil, moringa seed oil were screened for compatibility and synergistic effects with diclofenac diethylamine. and used to formulate emulsion. Eight different emulsion formulations were prepared and evaluated on their physical appearance, phase separation and globule size. These emulsions were incorporated into 1.5% Carbopol gels to give emulgels. All the formulated Emulgels were found to be acceptable on parameters such as physical appearance like colour, homogeneity, consistency, Spreadability and pH. F3 formulation was selected as the optimized one better Spreadability, viscosity and pH. In conclusion the emulgels prepare with essential oils will be an innovative therapeutic approach in treatment of arthritis.

Keywords: Diclofenac Diethylamine, Emulgel, Carbopol 934, Essential Oils

CQR 75

CHALLENGES FOR PROJECT MANAGERS IN CLINICAL TRIALS

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The role of a Project Manager in clinical trials is multifaceted and complex, demanding a high level of expertise, precision, and the ability to navigate a myriad of challenges. The organizational abilities of the Project Manager are critical to establishing an effective monitoring system that observes each important area of the project for early signs of potential problems or other matters that require attention. The Project Manager's primary professional objective is to guide a project through a maze of processes to a successful outcome. He or she keeps track of the status of the clinical data, the status of funds utilization, the status of medicine supplies, and the status of the market for which the medicine is being targeted. The role of a project manager in clinical trials requires a blend of technical expertise, strategic planning, and interpersonal skills. Successfully navigating these challenges is crucial to the success of clinical trials. Continuous professional development, robust support systems, and the adoption of innovative technologies can enhance the ability of project managers to overcome these challenges and lead clinical trials to successful completion. This abstract explores the primary challenges faced by project managers in clinical trials, including regulatory compliance, timeline management, resource allocation, data integrity, stakeholder coordination, risk management, and patient recruitment and retention.

Keywords: Project Manager, Clinical Trail.

CQR 76

DIGITAL PHARMACOPEIA: NAVIGATING AI'S IMPACT ON DRUG DISCOVERY AND DEVELOPMENT

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The relentless advancement of Artificial Intelligence (AI) technologies has catalyzed a paradigm shift in drug discovery and development, promising accelerated timelines, reduced costs, and enhanced precision. This abstract delves into the transformative role of AI in revolutionizing pharmaceutical research and development processes. AI-driven methodologies, such as machine learning and deep learning algorithms, are enabling researchers to sift through vast troves of biological data with unprecedented speed and accuracy. By analyzing complex datasets encompassing genomics, proteomics, metabolomics, and clinical data, AI algorithms can identify novel drug targets, predict therapeutic outcomes, and optimize molecular structures with remarkable efficacy. Moreover, AI-powered virtual screening techniques have streamlined the identification of lead compounds, expediting the early stages of drug discovery. Through virtual simulations and predictive modelling, researchers can assess the pharmacokinetic and pharmacodynamic properties of potential drug candidates, prioritizing those with the highest probability of success for further experimentation . In the realm of drug development, AI facilitates the design of more efficient clinical trials through patient stratification and predictive modeling of treatment responses. By leveraging real-world evidence and patient data, AI algorithms can identify biomarkers, predict adverse reactions, and personalize treatment regimens, thereby enhancing therapeutic efficacy and patient outcomes. However, the integration of AI technologies into drug discovery and development is not devoid of challenges, including data quality, interpretability of AI-driven insights, and regulatory compliance. Addressing these hurdles necessitates interdisciplinary collaboration between data scientists, biologists, clinicians, and regulatory authorities. In conclusion, AI holds immense promise as a transformative force in pharmaceutical research and development, offering unparalleled opportunities to expedite the discovery of novel therapeutics, optimize treatment strategies, and ultimately improve global healthcare outcomes.

Keywords: Artificial Intelligence (AI), AI-driven methodologies, pharmacokinetic and pharmacodynamic properties.

CQR 77

ENHANCING PHARMACEUTICAL SAFETY BLOCKCHAIN AGAINST COUNTERFEIT DRUGS

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The healthcare industry faces a growing problem with counterfeit drugs, posing significant dangers to society. "These pharmaceutical products are either composed of incorrect ingredients or contain the correct ingredients but in the wrong amount. Drug counterfeiting is being identified as a serious threat to the users globally. The consumption of these fraudulent products might have serious repercussions ranging from minor deterioration in health to very severe impacts such as death of the people. Blockchain technology has the potential to enhance traceability, visibility, and security in the pharmaceutical supply chain. The system proposed is intended to keep track of drugs from manufacturing until delivery to patients in the pharmaceutical industry. Drug counterfeiting is a result of the imperfect supply chain system in the pharmaceutical industry, as drugs change. Implementing blockchain technology in the pharmaceutical supply chain could significantly reduce the incidence of counterfeit drugs, improve patient safety, and increase trust in pharmaceutical products Blockchain's advanced features make it capable of providing a basis for complete traceability of drugs, from manufacturer to end consumer, and the ability to identify counterfeit-drugs. Blockchain technology is no exception in providing the solution to eliminate the counterfeit markets across the globe.

Keywords: Blockchain technology, pharmaceutical supply chain, Drug counterfeiting.

CQR 78

DESIGN AND EVALUATION OF TROCHES OF MONTELUKAST SODIUM

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Both chewing gum and lozenges may be considered as alternatives to current dosage forms. They are easy to handle, the dose has been apportioned and the excipients have a demulcent effect on a sore throat since the ingredients are released slowly and spread uniformly over the affected mucosal membrane. They are intended to be allowed to dissolve on the back surface of the tongue to provide drug delivery locally to the mouth, tongue and throat etc., to minimize systemic and maximize local drug activity. In the present investigation Montelukast sodium was formulated as compressed tablets lozenges (troches) to provide slow release of the medicament for the treatment of prevention of symptoms caused by asthama and to relieve the symptoms of allergic rhinitis. The compressed tablet lozenges were prepared with Mannitol based sugar substitute. Formulations of compressed tablet lozenges were subjected to various in-vitro evaluation tests like pre formulation and post compression parameters. The optimized formula was examined for drug excipient interactions subjecting to Fourier transform infrared (FTIR) spectral analysis. The results of pre and post compression parameters were within the I.P. limits. Among all the formulation of compressed tablet lozenges FT13 shown the in-vitro drug release of 95.2% at the end of 30 minutes and it follows Zero order.

Keywords: Cough, Montelukast sodium, Troches, Zero order

CQR 79

SIMPSON'S PARADOX IN CLINICAL TRIALS: A BRIEF EXPLORATION

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Simpson's paradox occurs when a trend appears in different groups of data but reverses when the groups are combined. This paradox can significantly impact the interpretation of clinical trial results, potentially leading to misleading conclusions about treatment efficacy and safety. Clinical trials provide evidence on treatment efficacy & safety. However, interpreting trial data can be complex, especially with statistical anomalies like Simpson's paradox. Simpson's paradox occurs when the association between two variables reverses upon the inclusion of a confounder. Ex: A treatment might seem beneficial within subgroups but harmful when data are aggregated. This can result from differing distributions and relationships between variables. Misleading Results, Subgroup Analysis, Confounding Variables, Decision Making. 1. Stratification: Analyzing data within confounder-defined strata can reveal true associations. 2. Multivariate Analysis: Using techniques like regression analysis to adjust for confounders helps isolate the primary variable's effect. 3. Causal Inference Methods: Propensity score matching and instrumental variable analysis help discern causality. 4. Graphical Methods: Visualization tools like causal diagrams assist in understanding variable relationships. 5. Sensitivity Analysis: Assessing robustness to model assumptions and variable inclusion provides clearer insights. Simpson's paradox poses significant challenges in clinical trial analysis. Understanding its mechanisms and implications, and employing appropriate strategies, can mitigate its impact, ensuring accurate and reliable results.

Keywords: Simpson's, Paradox, Clinical

CQR 80

TRANSDERMAL DRUG DELIVERY SYSTEM

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Transdermal applications, relative to other routes, are noninvasive, requiring the simple adhesion of a "patch" resulting in better patient compliance, improved bioavailability of a drug and easy treatment termination. Therapeutically these dosage forms provide constant plasma drug levels constantly duplicating the benefits of I.V. infusion.The transdermal route has been recognized as one of the highly potential routes of systemic drug delivery and generated lot of interest since last three decades. Transdermal drug delivery systems deliver medicines via the skin portal to the systemic circulation at a predetermined rate and maintain clinically effective concentrations over a prolonged period of time. This realization of clinical benefits of the transdermal delivery of therapeutic agents has now brought transdermal delivery to the forefront. However, the application of transdermal delivery to a wider range of drugs is limited due to the significant barrier to penetration across the skin, in particular the stratum corneum (SC). In this view,we discribe different types of available TDDS methods, along with a critical discussion with of the specific advantage and disadvantage, characterization methods and potential of each method. Progress in research on these alternative methods has established high efficiency inherent to TDDS, which is expected to find applications a wide range of field.

Keywords: Transdermal drug delivery,skin, plasma levels,stratum corneum.

CQR 81

SOURCES OF BIAS IN CLINICAL TRIALS AND CHALLENGES IN CONTROLLING BIAS

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Bias in clinical trials can significantly distort study outcomes, undermining the reliability and applicability of the results. Key sources of bias include selection bias, performance bias, detection bias, attrition bias, and reporting bias. Selection bias occurs when participants are not representative of the general population, leading to unequal distribution of confounding variables. Performance bias arises from differential care beyond the interventions being studied, often due to knowledge of group assignments. Detection bias involves biased outcome assessments influenced by intervention awareness. Attrition bias results from unequal loss of participants across groups, while reporting bias occurs when publication decisions are influenced by the nature of the results. Controlling these biases poses several challenges. Ensuring proper randomization and concealed allocation is complex, particularly in small trials. Achieving and maintaining blinding is difficult, especially for surgical or behavioral interventions and in long-term studies. Adherence to standardized protocols across multiple sites can be inconsistent, leading to variability and bias. Despite guidelines like CONSORT, transparent reporting is not always adhered to, with incomplete disclosure of conflicts of interest and funding sources. To mitigate bias, rigorous methodologies such as robust randomization, blinding, standardized protocols, and transparent reporting are essential. However, practical and inherent complexities often limit these efforts. Continuous improvement in trial design and adherence to best practices are crucial for enhancing the validity and generalizability of clinical research findings.

Keywords: clinical trials, Bias, Detection bias, standardized protocols.

CQR 82

CHALLENGES IN PATIENT RECRUITMENT AND RETENTION IN CLINICAL TRIALS

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Patient recruitment and retention are critical challenges in clinical trials, significantly impacting the validity and generalizability of study findings. Recruiting sufficient participants can be difficult due to stringent eligibility criteria, patient mistrust, logistical barriers, and limited awareness about trials. Eligibility criteria, designed to ensure safety and homogeneity, often exclude many potential participants. Additionally, logistical barriers such as travel distance, time commitment, and financial costs deter participation, while a lack of awareness about available trials limits the pool of eligible recruits. Retention of participants poses an equally significant challenge. High dropout rates can lead to incomplete data, reduced statistical power, and biased results. Factors influencing retention include the burden of participation, such as frequent visits, invasive procedures, and lengthy follow-up periods, which can lead to participant fatigue. Adverse events, perceived lack of benefit, or dissatisfaction with the trial process also contribute to attrition. Ensuring participant retention requires addressing these issues through patient-centric approaches, including flexible scheduling, reducing visit frequency, and providing adequate support and communication. Strategies to improve recruitment and retention encompass broadening eligibility criteria, enhancing patient engagement and education, leveraging technology for remote monitoring. Building trust through transparent communication and involving patients in the trial design process can also enhance participation. Overcoming these challenges is essential for conducting robust and generalizable clinical trials that can advance medical knowledge and improve patient outcomes.

Keywords: critical challenges, Patient recruitment, Eligibility criteria, biased results.

CQR 83

DENDRIMERS - AN OVERVIEW ON TYPES AND APPLICATIONS

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Dendrimers are nanosized, symmetrical molecules having a small atom which is surrounded by many symmetric branches known as dendrons. Dendrimers structure possesses the greatest impact on drug release. They grow outwards from core-shell that further reacts with monomers. These are having high compatibility with the biological systems. The presence of hyper branching, the well-defined spherical structure are the unique characteristics. These dendrimers are having a wide range of applications including medical and biomedical areas. Nano formulations based on dendrimers enhances solubility of low soluble drugs, arrives to the target tissue, enhanced bioavailability and have controlled drug release. In this review, we mainly focussed on the types of nano systems, synthesis, classification and applications of dendrimers in drug delivery. Dendrimer structures which are synthesized by two different methods that are divergent and convergent growth methods.

Keywords: Dendrimers, Nano systems, Nano devices, Divergent and Convergent growth

CQR 84

NANOMATERIAL AND ADVANCED TECHNOLOGIES IN TRANSDERMAL DRUG DELIVERY SYSTEM

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Transdermal drug delivery refers to a means of delivering drugs through the surface of the skin for local or systemic treatment. Recent advances in TDD involve the use of nanoparticles (NPs), which exhibit a great potential to enhance drug permeation across the skin. The drug functions after absorption through the skin into the systemic circulation via capillary action at a certain rate. Recent advances in TDD involve the use of nanoparticles (NPs), which exhibit a great potential to enhance drug permeation across the skin. NPs can also provide controlled release, the ability to deliver both hydrophilic and hydrophobic drugs and reduce side effects, and when used in a TDD method they are also non-invasive. Another developing technology for TDD employs skin patches containing microneedles. Microneedles represent a painless and minimally invasive method of TDD in which micron-sized pores are created in the epidermis to allow delivery of drugs to the blood vessels present in the dermal layer of the skin. New research has focussed on combining different TDD approaches to overcome previous constraints of drug delivery via conventional methods.

Keywords: Transdermal drug delivery; microneedle; nanoparticle; skin patch; stratum corneum.

CQR 85

ARTIFICIAL INTELLIGENCE IN MEDICAL DEVICES

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There is near infinite potential for artificial intelligence (AI) in medical devices, with almost all current technologies having the potential for improvement using AI. We discuss here some examples of how it is already being used and we have divided these into physical hardware devices and software or virtual devices, in part because they are different and also because the regulatory requirements vary for different medical devices. These devices have in turn been divided into community and specialist centre (such as hospital) uses to provide context. The increasing use of medical devices has led to the need for new regulations in both Europe and worldwide and these too are discussed. At the current stage of development AI in medical practice is existing in three technical forms: software, hardware, and mixed forms using three main scientific-statistical approaches – flowchart method, database method, and decision-making method. The conducted analysis makes it possible to admit a number of pros and cons in the field of AI using in healthcare. Based on the research, current emerging applications appear to fall into three main categories: Management of chronic diseases, Medical imaging, AI and Internet of Things (IoT).

Keywords: AI; Artificial Intelligence; Healthcare; Medical devices; Software.

CQR 86

FORMULATION AND EVALUATION OF QUETIAPINE MICROSPHERES.

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Atypical antipsychotic Quetiapine was approved by the US food and drug administration (FDA) used for the treatment of schizophrenia is a severe illness with substantial effects on individual and social functioning, Quetiapine and its active metabolite N-desalkyl-Quetiapine have affinities to dopaminergic D1-and D2receptors, 5-HT2 receptors. It is used orally for the treatment of schizophrenia and has a low bioavailability of 9%, because of its poor absorption in lower gastro intestinal tract. It undergoes little or no hepatic metabolism and its elimination half life is 6 hrs. Quetiapine (seroquel) is available as tablets for oral administration, containing 50 mg, 100 mg, 200 mg, 300 mg, or 400mg of Quetiapine. The once daily dosing of Quetiapine reaches similar overall plasma concentrations to the twice daily dosing of immediate release. Overview the clinical efficacy of 20 trials have been completed to determine Quetiapine in total 3,231 patients have been recruited; 1,677 of these patients were diagnosed with schizophrenia, 951 patients took part in short term trials over six weeks .Switching from Quetiapine immediate release or other antipsychotics to Quetiapine microspheres was feasible in a short time and maintained effective treatment.

Keywords: Quetiapine, microspheres, bioavability.

CQR 87

AN OVERVIEW ON ICH GUIDELINES: NEW INCLUSIONS

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The International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH) plays a pivotal role in unifying global standards for pharmaceutical development, regulatory approval, and manufacturing. Among its extensive guidelines, the recent inclusions of ICH Q13 and Q14 mark significant advancements in the realm of continuous manufacturing and analytical procedure development. ICH Q13 addresses the increasing adoption of continuous manufacturing (CM) processes in the pharmaceutical industry. Unlike traditional batch manufacturing, CM allows for the ongoing production of pharmaceuticals, which can

enhance efficiency, consistency, and scalability. This guideline provides a framework for the implementation of CM, focusing on the technical and regulatory considerations necessary for it adoption. ICH Q14 focuses on modernizing the development and validation of analytical procedures. Analytical methods are critical for ensuring the quality, safety, and efficacy of pharmaceutical products. Q14 aims to streamline the development process, enhance method robustness, and facilitate regulatory approval. The inclusion of ICH Q13 and Q14 represents a significant stride towards enhancing pharmaceutical manufacturing and analytical practices. ICH Q13 facilitates the transition to continuous manufacturing, promising greater efficiency and product consistency, while ICH Q14 modernizes analytical method development, ensuring robust and reliable procedures. Together, these guidelines reflect the ICH's commitment to fostering innovation, regulatory flexibility, and global harmonization in the pharmaceutical industry.

Keywords: ICH Guidelines, New inclusion, ICH Q13 guidelines, ICH Q14 guidelines

CQR 88

DESIGN AND DEVELOPMENT OF CHITOSAN INTERLINKED MULTI PARTICULATE SYSTEM

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Chrysin, is a naturally occurring flavonoid with strong anti oxidant and other pharmacological properties has limited therapeutic efficiency due to its poor solubility and bioavailability. This has led to the development of a multiparticulate drug delivery system (DDS) that uses chitosan as a cross linker for encapsulating chrysin. In this research we filled the chitosan interlinked chrysin microspheres and direct compressed mini tablets were packed into the formaldehyde treated zero size capsules. Initial dose is released due to compressed mini tablets and chitosan inter linked microspheres will release the drug in controlled manner their by we can improve bioavailability of Chrysin. The sustained release kinetics, resistance to degradation, and possibility of site-specific administration are just a few benefits of the chitosan interconnected chrysin multiparticulate DDS. By increasing chrysin's solubility, stability, and targeted distribution, this approach seeks to improve its bioavailability and therapeutic effects.

Keywords: Chrysin, flavonoid, multiparticulate drug delivery system, chitoson, mini tablets.

CQR 89

NANOPARTICLES IN DIAGNOSIS OF TARGETEDDRUG DELIVERY SYSTEM IN CANCER

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Cancer's persistent challenge demands refined therapeutic approaches, prompting the exploration of nanoparticles' distinct attributes in cancer treatment. This summary offers a comprehensive overview of nanoparticles' dual role in diagnosing cancer and facilitating targeted drug delivery systems. Nanoparticles possess unique physical and chemical characteristics that make them promising tools for targeted drug delivery in cancer treatment. Their size and customizable surface enable tailored modifications, allowing selective binding to specific cancer cells or tissues. This targeted approach enhances drug concentration at the site of action while mitigating systemic toxicity. Additionally, nanoparticles' capacity to encapsulate diverse therapeutic agents, from chemotherapeutic drugs to imaging agents, further augments their usefulness in cancer therapy. In cancer diagnostics, nanoparticles function as adept imaging agents, aiding in early tumor detection and accurate localization. Engineered nanoparticles can target cancer-specific biomarkers or receptors, facilitating precise imaging through modalities like MRI, CT scans, or fluorescence imaging. This abstract emphasizes nanoparticles' role in advancing personalized medicine through tailored targeted drug delivery systems, catering to individual patient requirements. The amalgamation of diagnostics and therapeutics using nanoparticles holds significant potential for transforming cancer treatment, promising heightened efficacy, minimized side effects, and improved patient outcomes. This review focuses on the research progress of

various receptors overexpressed on the surfaces of cancer cells and different Nano- delivery systems of anticancer drugs targeted on the surfaces of cancer cells. We believe that through continuous research and development, actively targeted cancer Nano-drugs will make a breakthrough and become an indispensable platform for accurate cancer treatment.

Keywords: Nanoparticles, Targeted Drug Delivery, Cancer Detection, Therapeutic Nanotechnology, Personalized Medicine, Biomarker Targeting.

CQR 90
VIRTUAL REALITY IN PHARMACY: OPPORTUNITIES FOR CLINICAL, RESEARCH, AND EDUCATIONAL APPLICATIONS

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Numerous medical applications employ virtual reality (VR) technology. In the field of pharmacy, Virtual Reality (VR) can serve various functions, including as an adjunct or alternative to medication, contributing to drug design and discovery, enhancing pharmacist education, and facilitating patient counselling and behaviour modification. Interest in applying VR technology in pharmacy is growing, although its use remains limited currently. Studies over the past decade have shown that VR is safe, effective, and leads to high user satisfaction, and its affordability, flexibility, and portability make it ideal for therapeutic applications in various settings. Although VR offers compelling features, it faces significant challenges, including clinical efficacy validation, affordability, usability problems, and technical limitations, as well as public acceptance. The article explores VR's role in pharmacy for clinical, research, and educational purposes.

Keywords: VR, pharmacy, therapeutic applications.

CQR 91
HEALTHCARE AND PHARMACEUTICAL INDUSTRIES USING ROBOTICS

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Rapid re-evaluation and use of robotic technology is benefiting the pharmaceutical, healthcare, and other sectors. Robots may improve health and well-being, close care gaps, support caregivers, and aid medical professionals—all of which have the potential to completely transform the healthcare sector. Modern technology makes it easier to identify the illness and choose the most effective course of action to reduce patient death. With robot assistance, surgical precision, rapid healing, and minimum disruption are guaranteed; after heart surgery, patients are often released in one to two days and return to full function in seven to ten days. One of the first surgical robots on the market was the DaVinci surgical system. Additionally, scientists might make better use of their time by using automated methods to evaluate data and work on more creative projects rather than completing repeated, mundane chores. Automation in pharmacies aims to reduce operating costs and boost prescription throughput. Pharmacy automation helps pharmacists and technicians avoid laborious manual operations. One of the first robotic systems for drug analysis was the Zymate system. The many robotic systems utilized in the pharmaceutical and healthcare sectors are the main topic of this study. More specialized, smaller systems with simpler robotics and user-friendly menu-driven programming have been created to increase dependability. Thanks to artificial intelligence, the pharmaceutical industry may now use simple data analysis to identify answers to problems that were previously unsolvable.

Keywords: Artificial Intelligence, Robots, Healthcare robots, Pharmaceutical robots.

CQR 92

CURRENT DEVELOPMENTS IN NANO BASED DRUG DELIVERY SYSTEMS AND THEIR PROSPECTS: A REVIEW

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Tiny materials are used in nanomedicine and nano delivery systems to serve as diagnostic tools or deliver therapeutic medications to specific target regions in a regulated manner. Because nanotechnology allows for the exact delivery of drugs to specific places and targets, it offers significant benefits in the treatment of chronic human ailments. Nanomedicine has shown great promise in treating several diseases via the use of biological, immunotherapeutic, and chemotherapeutic drugs. An extensive summary of current advancements in nanomedicines and nano-based drug delivery devices is given in this article. It looks at how focused diagnostics utilizing disease marker molecules and the efficacy of both new and old medications—such as natural products—are improved by the use of nanomaterials. The use of nanomedicines in clinical settings, including synthetic and natural medication delivery, is discussed along with its possible drawbacks. We have also included information on recent advancements and points of view in the area of nanomedicine.

Keywords: Nanomedicine, Nanomaterials, Nanotechnology, Drug targeting, Natural products.

CQR 93

NOVEL TECHNOLOGY IN FAST DISSOLVING TABLETS: A REVIEW

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Fast-dissolving pills are popular, particularly for juvenile patients with insufficient muscle and nervous system development and elderly patients with Parkinson's disease or hand tremors. Few solid dose forms like capsules and tablets now have difficulties like dysphagia, leading in non-compliance and inefficient treatment. Oral dose and method are the most preferable for medications with first-pass metabolism, mental patients, bedridden, and unwilling patients. FDTs breakdown readily in saliva without water. Real fast-dissolving pills dissolve in saliva in less than 60 seconds. Super disintegrants in FDTs accelerate tablet breakdown in the buccal cavity. FDTs are useful for elderly and pediatric patients because to their mobility, accuracy, chemical and physical stability, and ease of manufacture. FDTs dissolve and absorb quicker, improving in vitro drug release time and bioavailability. Conventional tablet and liquid dose forms benefit from FDT formulations. Spray drying, cotton candy method, sublimation, melt granulation, direct compression freezing drying/lyophilization, phase transition process, mass extrusion, and others are common or patented FDT production processes. This study covers FDT definition, benefits, needs, prominent characteristics, limits, development obstacles, commercialized fast dissolving tablet formulations, and more.

Keywords: Superdisintegrants, Mouth dissolving tablets, MDT, Fast dissolving tablets, FDTs.

CQR 94

OCUSERTS: A NOVEL FORMULATION APPROACH IN DRUG DELIVERY SYSTEM

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Eye is God's most amazing creation since it makes us aware of items close and distant. Topical medication delivery to the eye is difficult since the eye is one of the most delicate and important sense organs. Topical medication application is the standard therapy for conjunctivitis, eye flu, etc. Local treatment uses the eye as a conduit for medication administration to minimize ocular injury from unintended high blood drug concentrations. Drug delivery systems for the eyes are one of the most exciting and hard tasks for pharmaceutical researchers. This field has developed greatly in the previous 10-20 years.

Keywords: Ophthalmic Dosage Forms, Drug Delivery into Eyes, Ocuserts, Drug Release.

CQR 95

PREFORMULATION STUDIES OF AMLODIPINE ORODISPERSABLE FILMS

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The orally disintegrating systems is the one of the novel systems and provide patient compliance for geriatrics, paediatric as well in special medical conditions due to their thinness and flexibility. Orodispersible films (ODFs) are single or multilayer sheets of appropriate materials that are placed in the mouth and disperse fast, requiring only a small amount of saliva on the tongue to dissolve within a few minutes after administration. Amlodipine besylate is a third-generation dihydropyridine derivative calcium channel blocker was inserted into the ODFs via the solvent casting approach. The preformulation studies were conducted to check the feasibility of loading a water insoluble model drug. The dummy films composition was first screened by Placket Burman design and finally the best composition was loaded with drug. The films were evaluated for critical quality attributes (CQA) such as mechanical peelability, folding endurance, homogeneity and disintegration time. The CQA scores range from 1 to 3 were assigned and the film with highest CQA scores was selected for further optimization with full factorial design. The final drug loaded films were also tested for drug release studies. This study concludes that amlodipine can be administered in the form of ODFs with complete drug release in 8 minutes.

Keywords: Orodispersible films, preformulation studies, amlodipine, Placket Burman screening design, full factorial optimization design.

CQR 96

IMMERSIVE LEARNING : CUSTOMIZABLE VIRTUAL REALITY LABORATORIES FOR PHARMACEUTICAL EDUCATION

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Creating a Virtual Reality (VR) Laboratory System for pharmaceutical students revolutionizes traditional learning by offering an immersive, customizable, and interactive educational experience. This innovative platform allows students to design and personalize their virtual labs to suit their unique learning preferences and requirements. A VR teacher guides them through complex pharmaceutical concepts and experiments, providing real-time feedback and support. The system's flexibility enables students to access their virtual labs from anywhere at any time, breaking geographical and time constraints. This all-in-one learning environment fosters enhanced engagement, deeper understanding, and practical skill development in pharmaceutical studies, ensuring students are well-prepared for their professional careers. In conclusion, the Virtual Reality Laboratory System offers pharmaceutical students a transformative, flexible, and engaging learning experience. By customizing their labs and receiving guidance from a VR teacher, students can deepen their understanding and practical skills. This innovative approach ensures they are well-equipped for real-world pharmaceutical challenges.

Keywords: Accessibility, customizability, safety and ethical training, immersive learning.

CQR 97

3D PRINTING TECHNOLOGY IN PROSTHETICS

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The advent of 3D printing technology has revolutionized prosthetic development, offering significant advantages over traditional manufacturing methods. This technology allows for the creation of highly customized prosthetic devices tailored to individual patient needs through advanced imaging techniques and digital modeling. 3D printing enables rapid prototyping, reducing production time from weeks to days, and lowering costs, making prosthetics more accessible, particularly in developing countries.Various 3D printing technologies, such as Fused Deposition Modeling (FDM) and Stereolithography (SLA), facilitate the production of complex and precise prosthetic components. The use of biocompatible and durable materials, such as PLA and ABS, ensures safety and longevity. Innovations in flexible and composite materials further enhance the

functionality and comfort of prosthetics.Case studies demonstrate the effectiveness of 3D-printed prosthetics, including affordable prosthetic hands for children and advanced bionic limbs with embedded sensors. Future advancements may include smart prosthetics with real-time monitoring capabilities and bio-printed limbs. Despite challenges like quality consistency and regulatory issues, 3D printing holds immense potential to improve the quality of life for amputees globally through affordable, customized, and quickly producible prosthetic solutions.

Keywords: 3D printing, Prosthetics, Customization, Rapid prototyping, Biocompatible materials, Cost-effective, Advanced imaging techniques Digital modelling, Fused Deposition Modeling (FDM)

CQR 98

ETODOLAC GRANULES: UNVEILING THE POTENTIAL OF CUSTARD APPLE STARCH AS A NOVEL EXCIPIENT

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The aim of the study is to extract starch from un ripened custard apple (Annona squamosa) and compare its properties with commercially available starch in the formulation of Etodolac granules. Starch, a polysaccharide comprised of sugars, is a conventional excipient extensively used in various pharmaceutical dosage forms, particularly in tablet manufacturing, where it serves as a disintegrant, filler, and binder in wet granulation processes. The isolation of starch from custard apple involved identification tests to confirm its purity. Compatibility studies were conducted as part of pre-formulation assessments. Subsequently, Etodolac granules were prepared using different concentrations (5%, 10%, and 15%) of Annona squamosa starch, alongside formulations employing commercially available starch at similar concentrations. Six formulations were evaluated for flow properties, including angle of repose, bulk density, tapped density, Hausner's ratio, and compressibility index. These assessments aimed to determine the ability of the prepared granules to withstand pressure during the compression phase, providing valuable insights into the potential utility of custard apple starch as a pharmaceutical excipient in comparison to established commercial starches like maize, corn, and potato starch.

Keywords: AnnonaSquamosa, polysaccharide, disintegrant, filler, binder, wet granulation.

CQR 99

REGULATORY PATHWAY OF CLASS I MEDICAL DEVICE ELASTIC BANDAGE OF USA

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USFDA is a Regulatory body of medical devices in the globe. According to USFDA medical devices are regulated by centre for devices and radiological health (CDRH). Regulatory pathway of medical devices in USA is varies based on intended use. Medical devices in USA divided into three classes based on the risk to the patient. Class-1 medical classes are low risk devices. The example of class -1 medical device Elastic Bandage is having different regulatory pathway and approval process. To get FDA Approval of Elastic Bandage is does not require premarket notification 510(k) and PMA (Pre-Market Approval) due to low risk device class, the steps involved in approval from FDA for class-1 devices are device registration, listing, and fee payment, which are must be renewal for every year. Navigating the regulatory pathway for Class I medical devices, including elastic bandages, in the USA requires adherence to stringent standards and thorough documentation. Manufacturers must demonstrate compliance with regulatory requirements related to safety, performance, and labelling.

Keywords: USFDA, CDRH, Elastic Bandage, class-1 devices.

LIST OF ABSTRACTS SELECTED FOR ORAL PRESENTATIONS IN CQR

S.NO	CODE	NAME OF CANDIDATES	COLLEGE NAME	TOPIC
1	CQR 5	T.Sowmya	Smt. Sarojini Ramulamma College Of Pharmacy, Maha bubnagar, Telangana	Formulation And Evaluation Of Terbinafine Anti-Fungal Nanogel For Topical Drug Delivery System By Using QbD Approach
2	CQR 15	Divya Theja Chilekampalli, Hepsibha Rani Cheboyina, Rishika Shrivastav, Bhargavi Chekkilla, Prasanthi Raghavarapu, Haarika Balusu *	Sarojini Naidu Vanita Pharmacy Maha Vidyalaya, Tarnaka, Secunderabad, Telangana	Formulation Development And In Vitro Evaluation Of Telmisartan Nanosuspension By QbD
3	CQR 37	Nida Tahreem, R. Prasanthi, Mamatha Tirunagari, Siva Jyothi Buggana*	Sarojini Naidu Vanita Pharmacy Maha Vidyalaya, Tarnaka, Secunderabad, Telangana	Formulation And In Vitro Evaluation Of Zafirlukast Nasal Microemulsion By QbD
4	CQR 43	Mandadi Sandhya Rani*	Vishnu Institute Of Pharmaceutical Education And Research, Narsapur, Medak, Telangana	Development, Optimization Via Box Behnken Design And Characterization Of Solid-Lipid Nanoparticles Of Letrozole For Improving The Anti-Cancer Activity For The Treatment Of Breast Cancer
5	CQR 47	G. Lakshmi Devi	Gitam School Of Pharmacy, Hyderabad, Telangana	Soluplus® Based Amorphous Solid Dispersions: An Experimental Approach To Ameliorate The Solubility And Anti-Retroviral Integrase Activity Of Dolutegravir In Rabbits.
6	CQR 52	Chekkilla Bhargavi[1,2]*, Pathuri Raghuveer[1] And Sunitha Sampathi[1]	[1]Gitam School Of Pharmacy (Deemed To Be University), Hyderabad, Telangana, India. [2] Sarojini Naidu Vanita Pharmacy Maha Vidyalaya, Hyderabad, Telangana, India.	Design, Optimization And Pharmacokinetic Evaluation Of Piribedil Loaded Nanostructured Lipid Carriers Dispersed In Nasal In Situ Gelling System For Effective Management Of Parkinson'S Disease
7	CQR 60	Anil Kumar V And R. Santosh Kumar	Gitam School Of Pharmacy., Gitam Visakhapatnam, A.P, India	Design, Optimization And Evaluation Of Carvedilol Fast Dissolving Tablets Employing Starch Humate – A New Modified Superdisintegrant.
8	CQR 33	Subhash Chandra Bose Penjuri	MNR College Of Pharmacy, Sangareddy, Telangana State, India.	Development And Evaluation Of Telmisartan Nanoparticles For Sustained Release

A C B

Pharm. Analysis / Pharm.Chemistry / Bioinformatics

ACB 1

STABILITY INDICATING UPLC METHOD FOR THE QUANTIFICATION OF POSACONAZOLE & ITS RELATED SUBSTANCES

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A stability-indicating UPLC method has been developed and validated for the determination of Posaconazole and its related substances with its four related substances (Hydroxytriazole, Tosylated compound, Deshydroxy posaconazole and Benzylated posaconazole) in the drug substance. Forth- with simple UPLC chromatographic separations were achieved on a Waters 2695 separation module inertsil C18 (250 mm length, 4.6 mm internal diameter and 3 m particle size) with a mobile phase con- taining 0.1% Orthophosphoric acid (i.e. 1 mL in 1000 mL water) in gradient combination with acetonitrile (ACN) at a flow rate of 0.5 mL/min and the eluent were monitored at 210 nm. As a result, the resolution of Posaconazole from any of impurities was found to be greater than 2.0. The test solution and spiked solutions were found to be stable in the diluent for 48 h. For the purpose method to be stability indicating, forced degradation studies were conducted and the method resolved the drug from its known impurities, stated above, and from additional impurities gene- rated when POS subjected to forced degradation; the mass balance was found close to 100%. Regression analyses indicate correlation coefficient value greater than 0.999 for Posaconazole and its known impurities. The LOD for Posaconazole and the known impurities was at a level below 0.05%. The method has shown good, consistent recoveries for known impurities (89% - 106%). To summarise, the method was found to be accurate, precise, linear, specific, sensitive, rugged, robust, and stability-indicating.

Keywords: UPLC, Posoconazole

ACB 2

BIOANALYTICAL METHOD DEVELOPMENT FOR THE ESTIMATION OF AVACOPAN IN ITS PURE AND TABLET DOSAGE FORM BY USING RP-HPLC METHOD

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This study developed a reverse-phase high-performance liquid chromatography (RP-HPLC) method for estimating Avacopan in its pure form and tablet dosage. The method was validated according to ICH guidelines, focusing on linearity, accuracy, precision, limit of detection (LOD), limit of quantification (LOQ), and stability. The method demonstrated excellent linearity over a wide concentration range, with a correlation coefficient not exceeding 0.999. It was found to be specific, stable, and accurate, with no significant interference. This method is crucial for therapeutic monitoring and pharmacokinetic studies.

Keywords: AVACOPON, Therapeutic monitoring, pure form, tablet dosage, Method, Phase, Development, using, Tablet, studies, quantification, Pure, Estimation.

ACB 3

MARINE SOURCES AS ANTICANEROUS AGENTS

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This review highlights the impact of marine organisms, with particular emphasis on marine plants, algae, bacteria, actinomycetes, fungi, sponges and soft corals. Anti-cancer effects of marine natural products in in vitro and in vivo studies were first introduced; their activity in the prevention of tumor formation and the related compound-induced apoptosis and cytotoxicities were tackled.The first contribution to the study of marine and marine-inspired products as biologically active compounds that served as leads for drug discovery was published in the early 1950s by Bergmann et al., who described the arabinonucleoside spongothymidine (ara-T), isolated from the Caribbean sponge Tectitethya crypta. There are few examples of marine antineoplastic agents that have reached clinical phase trials. For instance, bryostatin 1, ET-743 and dolastatin 10. The bryostatin 1 has recently entered phase II clinical trial against melanoma, non-Hodgkin's lymphoma, renal cancer and colorectal cancer . The biological effect of bryostatin 1 is mediated via the promotion of normal growth of bone marrow progenitor cells. Moreover, ET-743, a tetrahydroisoquinilone alkaloid isolated from tunicate Ecteinascidia turbinata entered phase I clinical trials , since it exerts anti-proliferative effects by selective alkylation of guanine residues in the DNA minor groove , whereas dolastatin 10, a member of a peptide family isolated from the mollusk Dolabella auricularia, reached phase II clinical trials , based on its inhibition of microtubule assembly, which eventually leads to metaphase arrest in the cell.

Keywords: Marine, plants, microorganism, antitumor, anticancer, cytotoxic and clinical trials

ACB 4

BIO-ANALYTICAL METHOD DEVELOPMENT AND VALIDATION OF CYCLOSPORINE IN ITS PURE AND PHARMACEUTICAL DOSAGE FORM USING RP-HPLC

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A sensitive, specific and rapid high-performance liquid chromatography method was developed and successfully validated to estimate the Cyclosporin in rabbit plasma. The solvent extraction method was used for Cyclosporine from serum by using NaOH and 0.1N HCl. The column platisil C18 (250*4.6mm, 5μm) The mobile phase consists of 0.1% formic acid and 2mM ammonium acetate in water (Eluent A) or in Acetonitrile (Eluent B). at flow rate of 1ml/min and at fixed wavelength of 214nm. On ten minutes of run time, Cyclosporin was retention at 7.4min. The extraction efficiency 95% for Cyclosporin. The intra-day and inter-day precision was in the terms of %RSD less than 2%. The developed method was validated and proposed method is useful for pharmacokinetics studies.

Keywords: Cyclosporine, RP-HPLC, NaOH, Acetonitrile

ACB 5

PHARMACOPHORE BASED VIRTUAL SCREENING, MOLECULAR DOCKING, SYNTHESIS AND ANTIMICROBIAL ACTIVITY OF QUINOXALINE AMIDE DERIVATIVES

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Five antimicrobial drugs containing the quinoxaline moiety are used to build a pharmacophore model with "PharmaGist" which generated a four-point hypothesis. The best model with a score of 12.402, was used to screen the National Cancer Institute database of the Pharmit web server to obtain similar pharmacophore hits. Subsequently, molecular docking screening was performed by using Autodock Vina, to prioritize top lead

molecules. Based on the result a variety of quinoxaline amide derivatives were prepared from quinoxaline-2-carboxylic acid with corresponding substituted amines by using MWI, catalyst-free conditions and were characterized by spectral studies (IR, 1H, 13C NMR and Mass). All the synthesized compounds were screened for their antimicrobial activity by agar well diffusion method. Compound 3i showed good antimicrobial activity against Pseudomonas aeruginosa when compared with the standard drug Chloramphenicol. Moreover, compound 3i also showed good antifungal activity against Penicilliumchrysogenum when compared with the standard drug Ketoconazole, this may be due to the presence of more electronegative chlorine on the aromatic ring. Molecular docking studies clearly suggest that the compounds (3i and 3j) were found to be active against DNA gyrase enzyme, which clearly suggest the piperidine-3-carboxylate moiety plays a vital role in determining the antimicrobial potency of synthesized compounds. All the synthesized compounds well accommodated in active site and exhibited good binding affinity against DNA gyrase with good docking score of (-8.48 to -9.99 Kcal/mol) than standard drugs. The obtained experimental results when compared with docking results revealed, compound 3i and 3j may act as potent antimicrobial agents.

Keywords: Pharmacophore, PharmaGist, Molecular Docking, Quinoxaline amide, Microwave irradiation (MWI).

ACB 6

VIRTUAL SCREENING FOR IDENTIFICATION OF PYRIDINES AND PYRIMIDINES AS POTENT CDK9 INHIBITORS

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Cyclin-dependent kinase 9 (CDK9) has emerged as a promising therapeutic target for various cancers and viral infections due to its crucial role in cell cycle regulation and transcriptional control. In this study, we present a comprehensive virtual screening approach aimed at identifying novel pyridine and pyrimidine derivatives as potent CDK9 inhibitors. Utilizing computational tools and molecular docking simulations, we screened a large chemical library to prioritize compounds with favourable binding affinities and pharmacokinetic properties. Subsequent in silico ADMET (absorption, distribution, metabolism, excretion, and toxicity) analysis was employed to assess the drug-likeness and safety profile of the identified candidates. The top-ranking compounds were further evaluated through molecular dynamics simulations to elucidate their dynamic behaviour and stability within the CDK9 binding pocket. Our findings reveal several promising pyridine and pyrimidine derivatives with potential CDK9 inhibitory activity, warranting further experimental validation and optimization for therapeutic development against cancer and other CDK9-associated diseases. This integrative computational approach demonstrates its efficacy in accelerating drug discovery efforts and offers valuable insights into structure-activity relationships for the design of novel CDK9 inhibitors.

Keywords: CDK9 inhibitors, anti-cancer drugs, virtual screening, pyridines, pyrimidines

ACB 7

SYNTHESIS AND ANTIPROLIFERATIVE ACTIVITY OF THIAZOLIDIN FUSED BENZOCYCLOHEPTENE DERIVATIVES

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Isolation of natural products with benzosuberone moiety architecture started way back in the 18 th century. Colchicine is the major alkaloid from Colchicum autumnal, is one of the oldest known natural products. It is native to south, west and central Europe, but is cultivated world wide as an ornament plant. It shows antitumor activity, which is due to the binding of the aromatic ring of Colchicine with the hydrophobic domain of tubulin. Benzosuberone unit has a core structure of natural products such as Colchicine, Theaflavin, Bussealin E, Demethylsalvicanol, Brussonol and Feveline which were clinically proven as anticancer agents.

Keywords: Isolation, benzosuberone, Colchicum autumnal, anticancer agents

ACB 8

STABILITY INDICATING METHOD DEVELOPMENT AND VALIDATION FOR THE ESTIMATION OF DONEPEZIL HCI AND MEMANTINE IN PHARMACEUTICAL FORMULATION BY ULTRA PERFORMANCE LIQUID CHROMATOGRAPHY (UPLC)

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A Precise, Specific, Accurate, Robust and Rugged stability indicating RP-UPLC method has been developed and validated for the simultaneous estimation of Donepezil and Memantine in pharmaceutical dosage form (Tablets) was carried out by UPLC with Acquity UPLC HSS CN 50mm x 2.1mm & 1.8μm column as stationary phase by using mobile phase in Isocratic mode with a mixture of 0.1%Orthophosphoric acid and Acetonitrile in the ratio of 65:35%v/v at a flow rate of 0.5mL/min and detection was carried out at 210nm. The Retention time of Favipiravir was 1.622 min. The linearity response obtained for Favipiravir with >0.999 correlation coefficient in this method. The % Recovery for Favipiravir was obtained in between 98.0 to 102.0 in this method. Method has shown 99.8 % mean %assay in this method. In forced degradation study, main analyte peak purity was passed; degradation also obtained 5-30%. So method concluded as stability indicating.

Keywords: Memantine, Donepezil and ICH Guidelines, Validation,UPLC & PDA Detection.

ACB 9

RP-HPLC APPROACH FOR SIMULTANEOUS ESTIMATION OF RILPIVIRINE AND CABOTEGRAVIR IN BULK AND MARKETED FORMULATION

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A simple, accurate, precise, and sensitive RP-HPLC assay method has been validated to estimate rilpivirine and cabotegravir in pharmaceutical formulation simultaneously. Rilpivirine and cabotegravir were separated using Zorbax C 18 , (5μm, 150mm × 4.6mm i.d) column with mobile phase composition of acetonitrile and 0.1% formic acid in the ratio 30:70(v/v) under isocratic mode at a flow rate of 1ml/min. The wavelength used for detecting the drug was 248nm. Herepeak shape, theoretical plate count and symmetry were appropriate. The LOD and LOQ were calculated using statistical methods. The % RSD values were less than 2. The validation parameters, tested by the requirements of ICH guidelines, prove the suitability of this method. The method was successfully applied for the determination of the drug in tablets, wherein no interference from tablet excipients was observed, indicating the specificity of the developed method. The proposed method was simple, precise, accurate, rapid, economical, and reproducible for the estimation of rilpivirine and cabotegravir in pharmaceutical formulation.

Keywords: AI robotics, precision, healthcare, surgical innovation, technology

ACB 10

SUSTAINABLE PHARMA: GREEN CHEMISTRY, MANUFACTURING, SUPPLY CHAINS

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In the pharmaceutical industry, sustainability is becoming paramount. This abstract highlights the transformative role of green chemistry, manufacturing, and supply chain management in fostering sustainability within the pharmaceutical sector. Green chemistry innovations encompass environmentally benign processes, minimizing waste and hazardous materials while enhancing reaction efficiency. Similarly, advancements in manufacturing techniques, including continuous processing, aim to reduce energy consumption and optimize resource utilization throughout the production cycle. Moreover, supply chain

management strategies play a crucial role in ensuring sustainability across the pharmaceutical landscape. Optimization efforts focus on transportation efficiency, reduction of packaging waste, and sourcing materials from sustainable suppliers. Integrating block chain technology enhances transparency and traceability, essential for identifying inefficiencies and areas for improvement. By embracing these sustainable practices, pharmaceutical companies can not only reduce their environmental footprint but also enhance operational efficiency and cost-effectiveness. This abstract underscores the pivotal role of green chemistry, manufacturing, and supply chain management in driving sustainable practices within the pharmacy industry, paving the way for a greener and more resilient future.

Keywords: sustainable Pharma, supply chain, green chemistry, Pharmaceutical sector, block chain technology, cost effectiveness

ACB 11

IDENTIFICATION OF PUTATIVE TARGETS FOR 4-AMINOQUINAZOLINE DERIVATIVES BY COMPREHENSIVE COMPUTATIONAL TARGET FISHING

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4-Aminoquinazoline is one of the important pharmacophores in the field of medicinal chemistry and exhibit a wide spectrum of biological potentials. A study was carried to identify the target protein of 4-aminoquinazoline derivatives using reverse docking program.Pharm Mapper, a robust online tool was utilized for identifying the target proteins based onthe technique of reverse pharmacophore mapping. An open web-based server Pharm Mapperwas employed to identify the possible target of the selected compounds through reverse pharmacophore mapping. The results were analysed and validated through docking with Auto dock 4.2 tools using EGFR and phosphoinositide dependent protein kinase 1 as possible targets. The docking studies with Auto dock validated the binding behaviour of 4- aminoquinazoline compounds within the targets binding pocket. Molecular property prediction study demonstrated the significant selectivity of most active compounds 6a, 6b for target prediction. EGFR and 3-phosphoinositide dependent protein kinase 1were found crucial to be targeted for competing cancer. From the results, we may conclude that EGFR and PDK1 as possible targets for studied 4-aminoquinazoline derivatives where the retrieved information may be quite useful for rational drug designing.

Keywords: 4-Aminoquinazoline derivatives, Molinspiration, Swiss ADME, Pharm Mapper, EGFR and PDK1, Docking study.

ACB 12

SYNTHESIS, ANTI-CANCER, JAK2 INHIBITION, AND MD SIMULATION STUDIES OF NEW 3,4-DISUBSTITUTED QUINAZOLINES

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In recent years, various studies have elucidated the role of Janus kinase 2 protein in various solid tumors including breast, ovarian, prostate, and lung cancers, apart from hematological cancers. In continuation of our quinazoline research, we have synthesized a series of new 3,4-disubstituted quinazolines (2a, 2b, and 4a-4l) and evaluated them for their cytotoxicity against human breast cancer (MDA-MB-231) and ovarian cancer (SK-O-V3) cell lines using MTT assay. Among the tested molecules, compound 4b has shown the highest cytotoxic activity against SK-O-V3 ($12.5 \pm 0.76 \mu M$) and MD-AMB-231 ($18.2 \pm 0.43 \mu M$) cell lines. Additionally, in vitro mechanistic study of the most active compound, 4b was carried out and it showed 30.02% JAK2 inhibition. Further, the molecular docking experiment provided insights into the activity of compound 4b and its interactions with key active site residues. Molecular dynamics simulations performed on the JAK2-compound

4b complex have elucidated the conformation changes in the protein-ligand complex. The promising interaction of compound 4b with Leu932 is observed from the MD simulation data mining and it indicates the importance of the quinazoline nucleus. Further derivatization of these compounds with a larger data set and molecular dynamics simulations for more test compounds and a longer duration could provide deeper insights.

Keywords: Quinazoline, cytotoxic activity, MTT assay, breast cancer, JAK2, molecular dynamics.

ACB 13

COMPUTATIONAL INVESTIGATION OF MULTI-TARGETED INTERACTIONS OF PORTULACA PILOSA PHYTOCONSTITUENTS WITH BIOMOLECULAR TARGETS

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These days, complementary or alternative medicine (CAM) is often perceived as a form of traditional medicine. Consequently, neglecting to document and identify effective herbs for treating various diseases could hinder future disease control programs. The study aimed to conduct molecular docking analysis of the phytoconstituents of Portulaca pilosa, including Quercetin, Rutin, Naringenin, Luteolin and Kaempferol with target proteins associated with lung cancer, anti-hyperlipidemic and anti-inflammatory.This involved utilizing Chemsketch software for molecular structure depiction, Auto dock PYRx software for in-silico docking analysis, and Discovery Studio 3.1 for visualization of binding interactions. The molecular docking analysis, conducted using Auto dock PYRx software and visualized with Discovery Studio 3.1, reveals that these phytoconstituents exhibit excellent binding to proteins with PDB IDs 2ITY, IT02, and 5COX, surpassing the standard drugs Simvastatin, Erlotinib and Aspirin in terms of docking scores. This suggests that the phytoconstituents have the potential for significant biological activity, particularly in the treatment of lung cancer, Hyperlipidemic and Inflammatory conditions. The study underscores the importance of documenting and identifying effective herbal remedies for future disease control efforts.

Keywords: Portulaca pilosa, Molecular docking, Chemsketch, Auto dock PYRx, Phytoconstituents

ACB 14

STABILITY INDICATING HPLC METHOD FOR SIMULTANEOUS ESTIMATION OF MEROPENEM AND VABORBACTUM IN BULK AND TABLET DOSAGE FORM

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A simple, accurate, precise method was developed for the simultaneous estimation of the Meropenem and Vaborbactam in bulk and pharmaceutical dosage form. Chromatogram was run through Std Zorbax 150 x 4.6 mm, 5µ. Mobile phase containing Buffer Formic acid: Acetonitrile taken in the ratio 65:45was pumped through column at a flow rate of 1ml/min. Buffer used in this method was 0.1% formic buffer. Temperature was maintained at 30°C. Optimized wavelength selected was 220nm.Retention time of Meropenem and Vaborbactam found to be 2.364 min and 3.953 min. %RSD of the Meropenem and Vaborbactam were and found to be 0.6and 1.3respectively. %Recovery was obtained as 100.31% and 100.30% for Meropenem and Vaborbactam respectively. LOD, LOQ values obtained from regression equations of Meropenem and Vaborbactam were 0.53, 1.62and 0.52, 1.57 respectively. Regression equation of Meropenem is y = 21101x + 10155, and y = 21037x + 22037of Vaborbactam. Retention times were decreased, and that run time was decreased, so the method developed was simple and economical that can be adopted in regular Quality control test in Industries.

Keywords: Meropenem, Vaborbactam, RP-HPLC

ACB 15

DERIVATIVE SPECTROSCOPY APPLICATION IN SIMULTANEOUS QUANTIFICATION OF ANTI – VIRAL DRUGS

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Simple, precise, and accurate methods for simultaneous quantification of sofosbuvir and daclatasvir in combined tablet dosage forms using derivative spectroscopy have been developed. The methods were based on ratio derivative and first derivative method using 0.1 N HCl as solvent, for ratio derivative and first derivative the absorbance was measured at selected wavelength which are 246 nm for sofosbuvir and 324 nm for Daclatasvir in combined formulation. Beers law is obeyed in the concentration of 5-30 μg/ml for Sofosbuvir and 2-12 μg/ml for Daclatasvir. The % assay in commercial formulation was found to be 99.6 for Sofosbuvir and 100.4 for daclatasvir for first derivative spectroscopy and 97.45 for sofosbuvir and 99.71 for daclatasvir for ratio derivative spectroscopy. The methods were validated with respect to linearity, precision, accuracy, recovery was found in the range of 95- 101 % for sofosbuvir and 96-103% for daclatasvir for first derivative method and 97-101 % for sofosbuvir and 98- 102 % for sofosbuvir for daclatasvir for ratio derivative method respectively for formulation. The methods developed were simple, economical, precise, and accurate can be used for routine quality control of combined tablets.

Key words: Daclatasvir, Sofosbuvir, 0.1 N HCl, first derivative method and Ratio derivative method

ACB 16

QUALITY BY DESIGN ASSISTED ULTRA VIOLET SPECTROSCOPIC METHOD DEVELOPMENT OF DONEPEZIL HYDROCHLORIDE IN BULK AND DOSAGE FORM

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A novel ultraviolet spectroscopic method was developed and validated for the drug Donepezil Hydrochloride using the latest Quality by Design software as per International Conference on Harmonization of Technical Requirements for Pharmaceuticals for Human Use (ICH) guidelines. This modern scientific technology has been implemented to study the factors affecting the resultant absorbance of the drug and the selection of the solvent. The drug was analyzed through ultraviolet spectroscopy and validation parameters like linearity, accuracy, precision, and limit of detection and limit of quantification were determined. Donepezil showed maximum absorbance at 250 nm in methanol. The concentration range for linearity was detected in the range of 60-100μg/ml. The accuracy was found to be in the range of 98- 100%. The chemical behaviour of the drug and drug product was indicated by conducting forced degradation studies. The limit of detection and the limit of quantification were determined as 2.507 μg/ml and 7.599 μg/ml.

Keywords: Custom model method, Method validation.

ACB 17

QUALITY BY DESIGN ASSISTED ULTRA VIOLET SPECTROSCOPIC METHOD DEVELOPMENT OF DONEPEZIL HYDROCHLORIDE IN BULK AND DOSAGE FORM

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A simple, accurate, precise method was developed for the simultaneous estimation of the Netarsudil and Latanoprost in Opthalmic solution dosage form. Chromatogram was run through Phenomenex C18 150 x 4.6 mm, 5 . Mobile phase containing Water: Methanol taken in the ratio 55:45 was pumped through column at a flow rate of 1.0 mL/min. Buffer used in this method was Potassium dihydrogen phosphate. Temperature was maintained at 30°C. Optimized wavelength selected was 290 nm. Retention time of Netarsudil and Latanoprost were found to be 2.588 min and 3.221 min. %RSD of the Netarsudil and Latanoprost were and found to be 0.7 and 1.4 respectively. %Recovery was obtained as 99.86 % and 100.47% for Netarsudil and Latanoprost respectively. LOD, LOQ values obtained from regression equations of Netarsudil and Latanoprost were 0.07 μg/mL, 0.02 μg/mL and 0.21 μg/mL, 0.07 μg/mL respectively. Regression equation of Netarsudil is y = 11999x + 1319.8 and y = 13329x + 380.64 of Latanoprost. Retention times were decreased and that run time was decreased, so the method developed was simple and economical that can be adopted in regular Quality control test in Industries.

Key Words: Netarsudil, Latanoprost, RP-HPLC

ACB 18

DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR THE ESTIMATION OF A NEW PREGABALIN DERIVATIVE IN CAPSULE DOSAGE FORM.

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An anti-epileptic pharmaceutical called Pregabalin is utilized to treat seizures and convulsions. Pregabalin diminishes allodynia and hyperalgesia, the two fundamental signs of neuropathic torment. Pregabalin has exceptionally low UV absorptivity and subsequently it difficult to analyse this drug by UV spectroscopy. An explanatory derivatization method has been utilized employing, a derivatizing agent called benzene sulfonyl chloride to move forward the detectability of pregabalin, taken after by HPLC separation and measurement with UV-Visible detector. The ideal derivatization conditions were carried out with 3% sodium carbonate solution and benzyl sulfonyl chloride in equimolar proportions with pH maintained at 8-9 at room temperature. The Waters 1525 system was utilized for the HPLC examination. It was outfitted with a Luna C18 (250 cm × 4.6 mm) 5 μm column. The Mobile phase is composed of Methanol: 0.1% OPA (70:30 v/v) with a rate of flow 1.0 mL/min. The retention time for pregabalin was around 4 minutes with a run time of 10 minutes. The ICH guidelines for specificity, linearity, accuracy, precision, robustness and ruggedness were all satisfied by the method& validation. Pregabalin illustrated linearity over the concentration range of 10 to 100 µg/Ml with a correlation coefficient of 0.998. The method's accuracy ranged from 99.53 to 101.6%. The intraday and inter-day precision % RSD values were found to less than 2%. The %RSD for robustness and ruggedness were found to be within the limits. Hence this method is reliable and suitable for measuring Pregabalin in bulk and capsule dosage forms.

Key words: Pregabalin, Derivative, Methanol, UV-Visible spectroscopy, RP-HPLC.

ACB 19

SYNTHESIS, INSILICO EXPERIMENTS AND BIOLOGICAL EVALUATION OFDITHIOCARBAMATE DERIVATIVES AS CHEMOTHERAPEUTIC AGENTS

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Dithiocarbamates are considered as an important motif owing to its extensive biological applications in medicinal chemistry. Recent advance study shows that they have anticancer, Antifungal, antibacterial, anti-Alzheimer, antitubercular, anti-glaucoma, anti-cholinergic, anti-inflammatory activities which elaborated with notable examples. The synthesis of this framework can easily be achieved via a one-pot reaction of primary/secondary amines, CS 2, and alkyl or aralkyl halides. Present research work focuses on synthesis, Insilco drug design and evaluation of new dithiocarbamate derivatives as antimicrobial agents. All designed compounds were synthesized and characterized by using different spectroscopic techniques. Subsequently, subjected to Molsoft, Molinspiration, Swissadme, PkCSM to predict their molecular properties which are important for drug candidate. Simultaneously docking studies were performed using Autodock Vina software to evaluate biological activity. The results exhibited that, compounds stratified to Lipinski's,rule, this proves them as safe administrable drugs and establishes their pharmacological activity. Results also indicating that synthesized compounds are more selective for antibacterial activity rather than antifungal activity. The binding energies of the antifungal target (3IDS) indicating, none of the compounds are active when compare to the standard Fluconazole except 4e. The docking results suggest that the hydrophobic interactions are important for antimicrobial activity rather than hydrogen bond interactions.

Keywords: Dithiocarbamates, Molsoft, Autodock Vina, PkCSM

ACB 20

INSILCO PHARMACOKINETIC ANALYSIS OF BIOACTIVE CONSTITUENT AND ANTHELMINTIC ACTIVITY OF FLOWER EXTRACT OF PELTOPHORUM PTEROCARPUM

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In silico drug-likeness prediction along with further ADME/Tox tools presents an array of opportunities which help in discovery of new targets and ultimately lead to compounds with predicted biological activity. Peltophorum pterocarpum belonging to family Fabaceae and traditionally it is claimed to be used in the treatment of stomatitis, insomnia, constipation, ringworm, dysentery, muscular pains, sores and skin disorders. The chemical constituents include flavonoids, alkaloids, phenolics, terpenoids, saponins, etc are present. Peltophorum pterocarpum has their wide range of biological activities such as anticancer, antimicrobial, antioxidant, and antiglycemic activities. This study is to predict the pharmacokinetic parameters of bioactive compounds using in-silico methods and to investigate the Anthelminthic activity of flower extract of Peltophorum Pterocarpum. The “drug-likeness” and ADMET prediction performed nearly showed compliance with the Lipinski rule, and the compounds were found to have good pharmacokinetic activity generally. The methanolic extract of Peltophorum Pterocarpum flowers were investigated for anthelmintic activity using earthworms with different doses i.e., 25, 50, 100 mg /ml, and showed a significant activity by comparing with the standard drug Albendazole. Plant flower extract expressed in terms of time for paralysis and time for death of worm.

Keywords: In- silico method , Peltophorum Pterocarpum, Anthelmintic activity.

ACB 21

SYNTHESIS AND EVALUATION OF NEW BIS-ISATIN MANNICH BASE DERIVATIVES AGAINST ANTI-BACTERIAL ACTIVITY

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The remarkable range of biological activities exhibited by Isatins (1H-Indole-2,3-dione), including their ability to combat viruses, bacteria, and inflammation, has sparked a surge of interest among organic and medicinal chemists. These versatile molecules hold immense promise as potential drugs, prompting researchers to delve deeper into their properties. The literature review delves into the latest research on the chemistry of Isatin derivatives, exploring various synthesis methods and their potential applications as therapeutic agents. The review highlights the diverse biological activities of these compounds, including their effectiveness against a range of infectious diseases, their pain-relieving properties, and their potential role in cancer treatment and blood pressure regulation. Additionally, the review explores the laxative and diuretic properties of Isatin derivatives, showcasing their potential in various medical contexts.Following synthesis, the new bis-isatin compounds were thoroughly characterized using various techniques, including physical analysis, Thin Layer Chromatography (TLC), Infrared (IR) spectroscopy, Proton Nuclear Magnetic Resonance (^{1}H-NMR) spectroscopy and Mass Spectrometry (MS). Subsequently, the compounds were evaluated for their antibacterial activity.Among the synthesized bis-isatin Mannich base derivatives, several demonstrated promising antibacterial activity. Notably, the compounds where R groups were diphenylamine, diethanolamine, diethylamine, and dicyclohexylamine displayed particular potency against Klebsiella pneumoniae, Escherichia coli, Staphylococcus aureus, and Bacillus subtilis, respectively.

Keywords: Isatins, cancer treatment, antibacterial activity, R groups.

ACB 22

UNVEILING PONESIMOD IN TABLETS WITH A POWERFUL UPLC-MS APPROACH: PROMISING SENSITIVITY

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Ponesimod, a promising drug for autoimmune diseases, necessitates a reliable method for measuring its concentration in tablets. This study tackles this challenge by developing and validating a sensitive and specific UPLC-MS method for analyzing Ponesimod in tablet dosage forms.Reported analytical methods primarily focus on biological samples like blood plasma, which might not be directly applicable to analyzing tablets due to differences in the sample composition.To address this gap, we developed a UPLC-MS method specifically for Ponesimod tablets. The method employs a YMC Triart C18 column and a mobile phase consisting of 0.1% formic acid in water and acetonitrile (70:30 v/v) at a flow rate of 0.6 mL/min. Detection utilizes Electrospray Ionization (ESI+) in positive mode with Selective Ion Monitoring (SIM) targeting the m/z 152.20 ion. This UPLC-MS method demonstrated excellent linearity (R^2 = 0.9994) within the concentration range of 0.8-1.5 ng/mL, indicating a strong correlation between the amount of Ponesimod present and the instrument's response. Furthermore, the method exhibited robustness with RSD values below 1.99% when flow rate and column oven temperature were varied. Recovery studies at spiking levels of 80%, 100%, and 120% yielded values between 98.3% and 101.6%, signifying good accuracy.In conclusion, this validated UPLC-MS method offers a reliable and efficient approach for quantifying Ponesimod in tablets, overcoming limitations of existing methods designed for biological samples. This method has the potential to significantly improve quality control of Ponesimod tablets and pave the way for pharmacokinetic studies to understand the drug's behavior in the body.

Keywords: Ponesimod, autoimmune diseases, UPLC-MS, analytical methods .

ACB 23

DEVELOPMENT AND VALIDATION FOR ESTIMATION OF β-SITOSTEROL IN UDARSAFFA AN AYURVEDIC FORMULATION UDARSAFFA

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The aim of the present work was to develop and validate a reversed-phase high-performance liquid chromatography method for the estimation of β-sitosterol as a marker component in a polyherbal formulation containing Operculina turpethum , Terminalia chebula , Cassia fistula, Plantago ovata, Aegle marmelos, and Cassia angustifolia extracts. Each herbal was also evaluated and validated for the marker. The analysis was performed on a C8 column using the mobile phase consisting of solvent A (acetonitrile) and solvent B (water) with the gradient 70:30 at a flow rate of 2 ml/min. Ultraviolet detection was at 205 nm. The method was validated for accuracy, precision, linearity, specificity, and sensitivity as per the norms of the International Conference on Harmonization. From the validation study, it was found that the method is specific, accurate, precise, reliable, and reproducible. Good linear correlation coefficients $r2 > 0.994$ were obtained for calibration plots in the ranges tested. Limits of detection were 0.00055 µg/ml and limits of quantification were 0.00168 µg/ml for β-sitosterol. Intra and interday relative standard deviation (RSD) of retention times and peak areas was 0.00042%. Recovery was found to be 99.8% for β-sitosterol. The established method was appropriate and the marker was well resolved, enabling efficient quantitative analysis of β-sitosterol. The method is a rapid and cost-effective quality control tool for routine quantitative analysis of β-sitosterol in marketed formulation containing the mentioned herbs.

Keywords: Operculina turpethum, Terminalia chebula, Cassia fistula, Plantago ovata, Aegle marmelos, Cassia angustifolia, β-sitosterol, high-performance liquid chromatography.

ACB 24

ENANTIOSELECTIVE SEPARATION OF IMEGLIMIN HYDROCHLORIDE-A NEW ORAL ANTIDIABETIC DRUG ON NOVEL IMMOBILIZED CHIRALPAK IK-CSP USING HIGH-PERFORMANCE SUPERCRITICAL FLUID AND LIQUID CHROMATOGRAPHY

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A stereoselective method has been developed for the chiral separation of the enantiomers of Imeglimin hydrochloride drugs under subcritical conditions using a supercritical fluid chromatography Technique. Imeglimin is the first in a new tetrahydrotriazine-containing class of oral antidiabetic agents, the glimins. It has been shown to act on the liver, muscle and pancreatic β-cells to uniquely target the key defects of type 2 diabetes. The immobilized meta-substituted polysaccharide-derived carbamate columns (CSPs) have been chosen for chiral separation of imeglimin drug. The enantioseparation was achieved on CSPs by using alcohols as co-solvent. The method was optimized by studying the effects of different mobile phase additives, column temperatures and flow rates. The cellulose tris (3-chloro, 5-methylphenyl carbamate) immobilized on silica gel, was found to be useful for the chiral analysis of the imeglimin drug. Mobile Phase: Carbon dioxide/ Co-solvent (80/20), Flow rate : 3.0 mL/min, UV Detection: 245 nm, Column Temperature : 40°C, BPR : 102 kgf, Concentration: 1.0 mg/ml. The results are comparable with the Liquid chromatographic chiral analysis on the same CSP.

Keywords: Stereoselective method, Imeglimin hydrochloride, supercritical fluid chromatography Technique.

ACB 25

MOLECULAR DOCKING ANALYSIS OF NOVEL JAK-2 INHIBITORS FOR THERAPY OF MYELOPROLIFERATIVE NEOPLASMS

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Januskinase-2 (JAK2) is an intracellular, non-receptor tyrosine kinase belonging to the family of Janus kinase that also includes JAK1, JAK3 and TYK2.The recent discovery of JAK2's acquired point mutation V617F led to greater understanding its oncogenic role in Myeloproliferative tumors (MPN'S). At 617 position phenylalanine amino acid was replaced by valine due to mutation. During recent years, various research groups have identified a significant role of JAK2/STAT pathway in regulating various non-hematological cancers. Therefore, aiming abnormal JAK-2 to prevent its essential activation will be an optimistic alterative option in the treatment of Myeloproliferative tumors and non-hematological cancers. In this current study, using computational methods we have designed 20 novel Quinazoline JAK2 –inhibitors and evaluated them for interaction with the enzyme JAK2 through Insilico analysis like prediction of pharmacokinetics & Molecular docking studies. Among the designed 20 novel Quinazoline JAK2 – inhibitors 3 compounds were shown good activity with better dock scores and good ADMET properties with no Lipinski rule violation compared with the standard drug Baricitinib.Our present study concludes that the designed novel Quinazoline JAK2 –inhibitors are having potent anticancer activity.

Keywords: JAK2, Myeloproliferative Neoplasms, V-617F, Glide algorithm, Prime module.

ACB 26

SYNTHESIS AND ANTI-BACTERIAL EVALUATION OF NEW PYRAZOLINE DERIVATIVES AGAINST DRUG RESISTANT STAPHYLOCOCCUS AUREUS

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The unrestrained rise of infections caused by multidrug-resistant organisms has become a constant threat to human health. Despite the widespread availability of antibiotics, many bacterial strains have developed resistance, making it extremely difficult to treat these infections. The adult and paediatric populations are mostly infected by the Staphylococcus aureus. Several pharmacologically active molecules developed by hybridisation of pyrazoline and other active scaffolds are found to exhibit interesting biological properties. Current work describes the synthesis of various pyrazoline hybrids and their evaluation for anti-bacterial activity against a panel of bacterial pathogens. The synthesized compounds showed potent to moderate activity against drug-resistant strains of S. aureus. Among the synthesized compounds, 15g, 15m, 15o and 15q were found to possess potent activity against various resistant strains of S. aureus with MIC of 0.5&1 μg/mL, respectively. In addition, compounds 15m and 15o were found to be non-toxic to Vero cells and exhibited good selectivity index of $>$200.SAR studies revealed that Coumarin substitution at R2 position containing pyrazoline thiazole hybrids exhibited potent activity against MDR strain of S.aureus. Due to their structural similarity with the reported DNA gyrase inhibitors, Molecular docking studies revealed thatcompound 15gformed hydrogen bond with GLY1082 and showed p-p stacking interaction with guanidine and Adenine base pairs of DNA. Additionally, hydrophobic interactions are seen with ARG 458 and ARG 1122 and metal ion interaction with MN 2000. Based on these results, compounds 15g, 15m, 15o and 15q can be emerged as a potential lead for further development.

Keywords: multidrug-resistant, Staphylococcus aureus, pyrazoline thiazole.

ACB 27

DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR THE SIMULTANEOUS ESTIMATION OF LEDIPASVIR AND SOFOSBUVIR

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A simple, accurate and precise RP-HPLC method was developed for the simultaneous estimation of the Sofosbuvir and Ledipasvir in bulk and tablet dosage form. The method was developed by using Discovery C18 (4.6 X 150 mm X 5 μ) column and OPA (0.1%): acetonitrile (50:50) as mobile phase. Temperature was maintained at 30°C and the wavelength was 260.0 nm. Retention time of Sofosbuvir and Ledipasvir were found to be 2.458 and 2.972 min, respectively. The optimized method was validated as per ICH guidelines. The method showed good linearity for Sofosbuvir and Ledipasvir over the concentration range of25-150and 5.625-33.75 μg/mL, respectively. The %RSD values in accuracy, precision and robustness studies were found to be less than 2.0. The %assay values for both Sofosbuvir and Ledipasvir were found to be within acceptance criteria, when the analytes were estimated in the marketed formulation. The method was also found to be sensitive. The limit of detection and quantification values of Sofosbuvir (0.03 and 0.08) and Ledipasvir (0.03 and 0.09) indicated the same. The method showed less retention times, good linearity, accuracy and robustness. Hence, the developed RP-HPLC method can be utilized in the Quality control testing of both Sofosbuvir and Ledipasvir.

Keywords: Sofosbuvir, Ledipasvir, Precision, Accuracy, RP-HPLC.

ACB 28

ENSEMBLE PHARMACOPHORE MEETS MOLECULAR DOCKING: A NOVEL SCREENING APPROACH FOR THE IDENTIFICATION OF B-TUBULIN INHIBITORS.

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The major component of microtubules i.e, β-tubulin is considered as an attractive molecular target of several small molecules for treatment of cancers. In the present research, various computational studies were performed to develop prognostic 3D-QSAR models using a series of Dithiocarbamate derivatives as β-tubulin inhibitors for anticancer activity. Using 90 inhibitor molecules having PIC50 in the range of 4.012 to 8.141 a pharmacophore model was built up. For proper alignment of all inhibitor molecules a five-point common pharmacophore model was generated using a training set of 47 and test set of 43 molecules using PLS Factor 3. The generated pharmacophoric hypothesis AAHRR.1 (two hydrogen bond acceptors, one hydrophobic group and two aromatic rings) has excellent values of R2 = 0.955, Q2 = 0.616, F = 304.2, Pearson R = 0.7864, RMSE = 0.5058. Then virtual screening was performed by using Asinex Elite Synergy, Otava databases and identified several hits. Then the molecules which had crucial interactions with β-tubulin were obtained by performing SP & XP dockings for obtained hits. The molecular docking studies of these inhibitors at the binding pocket of β-tubulin showed vital interactions with Leu 252, Val 238, Asp 251, Asn 258, Val 315, Cys 241, Tyr 202 amino acids. We have also designed 14 new PurinylpyridineDithiocarbamate inhibitors. Almost 11 molecules exhibited crucial ligand interactions and higher docking scores compared to the standard. These findings led us in identifying new molecules with β-tubulin inhibitor activity, which could be used further to design molecules with better pharmacokinetic properties.

Keywords: β-tubulin, Molecular Docking, Pharmacophore model, Virtual screening, ADME Properties, Dithiocarbamate derivatives.

ACB 29

QBD ASSISTED METHOD DEVELOPMENT AND VALIDATION FOR ESTIMATION OF LOBEGLITAZONE IN BULK AND ITS FORMULATION BY UV SPECTROSCOPY

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This study presents the development and validation of a UV spectrophotometric method for the estimation of lobiglitazone in bulk and pharmaceutical formulations. Lobiglitazone, a potent antidiabetic agent, was analyzed using UV spectroscopy due to its simplicity, cost-effectiveness, and widespread availability. The method was optimized by selecting an appropriate solvent, wavelength, and conditions for maximum absorption. Validation parameters such as linearity, precision, accuracy, specificity, and robustness were evaluated according to ICH guidelines. The method exhibited good linearity over the concentration range, with correlation coefficient values exceeding 0.99. Precision studies demonstrated low %RSD values, indicating excellent repeatability and intermediate precision, Accuracy was confirmed by recovery studies conducted at three different concentration levels, Specificity was assessed by analyzing the drug in the presence of common excipients, demonstrating no interference. The method's robustness was evaluated by deliberately varying method parameters, and results indicated its reliability under different conditions. Overall, the development UV spectrophotometric method proved to be simple, accurate, precise, and robust for the estimation of lobiglitazone in bulk and its formulation, making it suitable for routine quality control analysis.

Keywords: UV Spectrophotometric, Lobiglitazone, Anti diabetic.

ACB 30

PHYTOCHEMICAL INVESTIGATION AND EVALUATION OF IN-VITRO ANTHELMINTIC ACTIVITY OF FLOWER EXTRACT OF SHOREA TUMBUGGAIA ROXB.

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Shorea tumbuggaia Roxb, a tree species belonging to the family Dipterocarpaceae, is a large deciduous tree native to Southeast Asia. This study aims to conduct a preliminary investigation into the phytochemical constituents and to explore the anthelmintic activity of flower extracts from Shorea tumbuggaia using methanol as the solvent. The flowers were extracted with methanol using the Soxhlet extraction method. Various chemical tests were performed to identify constituents such as alkaloids, glycosides, flavonoids, tannins, and saponins. The findings of this research could contribute to the development of novel, natural anthelmintic agents. The anthelmintic activities observed in all doses of the methanolic extracts of Shorea tumbuggaia were superior to those of the standard drug, albendazole.

Keywords: Shorea Tumbuggaia, flower extracts, Anthelminthic activity.

ACB 31

DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR THE ESTIMATION OF EMTRICITABINE AND TENOFOVIR DISOPROXIL FUMARATE TABLETS

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This study aimed to develop and validate a reliable method for the simultaneous estimation of Emtricitabine and Tenofovir Disoproxil Fumarate in tablet formulations. A reversed-phase high-performance liquid chromatography (RP-HPLC) technique was employed using an inert C18 column (150 x 4.6 mm, 5 μm) as the stationary phase and a mobile phase composed of 0.1% orthophosphoric acid and acetonitrile (50:50 v/v). Detection was achieved at 260 nm. The developed method exhibited satisfactory chromatographic separation

with retention times of 8.90 min and 12.34 min for Emtricitabine and Tenofovir Disoproxil Fumarate, respectively. Peak purity analysis confirmed the absence of interfering substances. System suitability parameters including theoretical plates and tailing factors demonstrated good performance. Additionally, no interference from diluents, placebo, or impurities was observed, indicating excellent specificity. The method exhibited a linear response for both drugs within the concentration range of 40-240 μg/mL for Emtricitabine and 60-360 μg/mL for Tenofovir Disoproxil Fumarate, with high correlation coefficients ($r^2 > 0.9997$). Recovery studies revealed satisfactory accuracy, with mean recovery values of 101.27% and 100.03% for Emtricitabine and Tenofovir Disoproxil Fumarate, respectively. Precision was established by demonstrating %RSD values within acceptable limits (< 2%). Forced degradation studies confirmed the stability of the drugs under various stress conditions. Furthermore, the method demonstrated robustness by maintaining system suitability parameters within acceptable limits under variations in flow composition, buffer composition, temperature, and detection wavelength. In conclusion, this validated RP-HPLC method offers a reliable, specific, and robust approach for the simultaneous quantification of Emtricitabine and Tenofovir Disoproxil Fumarate in tablet formulations.

Keywords: Emtricitabine, RP-HPLC, Forced degradation studies.

ACB 32

QUALITATIVE AND QUANTITATIVE ANALYSIS OF DRACAENA TRIFASCIATA VAR. LAURENTII AND ITS PHARMACOLOGICAL PROPERTIES

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Dracaena trifasciata, commonly known as the snake plant or mother-in-law's tongue that belongs to the Asparagaceae family. In folklore medicine, it is used for the treatment of different ailments such as ear-ache, ulcer, jaundice, pharyngitis, skin itches, urinary diseases, analgesic and antipyretic is well known.This study was intended to explore the phytochemical potential of the ethanolic extract of Dracaena trifasciata and determine the total phenolic and flavonoid contents in this extract. The leaves of Dracaena trifasciata were collected, powdered, and extracted using ethanol as a solvent through maceration, resulting in a 10.7% yield. The total phenolic content was measured using Folin-Ciocalteu's method and calculated as gallic acid equivalents, and the number of total flavonoids by aluminium chloride colourimetric method and calculated as Rutin equivalents. The qualitative phytochemicals analysis of ethanolic extract of Dracaena trifasciata showed the presence of various important pharmacologically active phytochemicals such as Alkaloids, Carbohydrates, Reducing sugars, Saponin, Phytosterols, Phenolic compounds, and Flavonoids. The Total Phenolic, Flavonoid, and wasfound to be 776.33 mg GAE /g and 284 mg RT/g, respectively.In the present study higher phenolic and flavonoid content, indicated the natural antioxidant nature of Dracaena trifasciatasignifying its medicinal importance.

Keywords: Dracaena trifasciata,Total phenolic, Total flavonoid, Maceration.

ACB 33

ENSEMBLE PHARMACOPHORE MEETS MOLECULAR DOCKING: A NOVEL SCREENING APPROACH FOR THE IDENTIFICATION OF B-RAF KINASE INHIBITORS

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In US about 106110 diagnosed as melanomas, 7,180 people expected to die due to melanoma. B-RAF is a cytoplasmic serine - threonine kinase that is found in a mutated form in melanoma and colorectal cancer. Sorafenib was initially introduced as a B-RAF inhibitor in melanoma. Hence it is taken as a pivot molecule in our study. Four potent B-Raf kinase inhibitors (Sorafenib, Regorafenib, N-desmethylsorafenib&Donafenib) are used to build a pharmacophore model with 'PharmaGist web server' which generated a 5-point hypothesis. The best

model with score of 27.780, was used to screen the Zinc database of ZINC Pharmer web server to obtain similar pharmacophore hits. By applying filters like Lipinski rule, RMSD criteria in ZINCPharmer top ten hits were identified. Subsequently, molecular docking was performed on wild (1UWH) and mutated (3IDP) B-Raf kinase protein targets by using GLIDE 5.6 (Schrödinger), to prioritize top lead molecules. Further these molecules are subjected to ADME Properties Prediction by Qik Prop module. Among ten, nine molecules have glide scores in the range nearer to the standard molecule i.e., Sorafenib. Finally, we conclude that ZINC02853810 may act as a powerful inhibitor against both wild and mutant type B-Raf kinase as it has highest glide scores than the Standard.

Keywords: B-Raf kinase inhibitors, Pharmacophore modeling, PharmaGist, ZINC Pharmer, ADME, Binding energy.

ACB 34

COMPUTATIONAL SCREENING OF SOME PHYTOCHEMICALS TO IDENTIFY BEST MODULATORS FOR LIGAND BINDING DOMAIN OF ESTROGEN RECEPTOR ALPHA

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Estrogen receptor alpha (ERα) has been established as a critical factor in breast cancer cell proliferation and has been efficiently treated in breast cancer chemotherapy with the development of selective estrogen receptor modulators (SERMs). The peculiar aim of this study is to discover and identify the most effective and potential inhibitors against the most influential target ERα receptor by in silico studies of 45 phytochemicals from six diverse ayurvedic medicinal plants. The molecular docking investigation was carried out by the genetic algorithm program of AutoDock Vina. The molecular dynamic (MD) simulation investigations were conducted using the Desmond tool of Schrödinger molecular modelling. This study identified the top ten highest binding energy phytochemicals that were taken for drug-likeness test and ADMET profile prediction with the help of the web-based server Qikprop. Molecular docking study revealed that ellagic acid (-9.3 kcal/mol), emodin (-9.1 kcal/mol), rhein (-9.1 kcal/mol), and quercetin (- 9.0 kcal/mol) phytochemicals showed similar binding affinity as standard tamoxifen towards the target protein ERα. MD studies showed that all four compounds possess comparatively stable ligand-protein complexes with ERα target compared to the tamoxifen-ERα complex. Among the four compounds, rhein formed a more stable complex than standard tamoxifen. ADMET studies for the top ten highest binding energy phytochemicals showed a better safety profile. Additionally, these compounds are being reported for the first time in this study as possible inhibitors of ERα for treating breast cancer, according to the notion of drug repurposing. Hence, these phytochemicals can be further studied and used as a parent core molecule to develop innovative lead molecules for breast cancer therapy.

Keywords: ERα, ADMET Studies, Molecular Docking, Breast Cancer, Phytochemicals.

ACB 35

RP-HPLC METHOD FOR SIMULTANEOUS DETERMINATION OF METFORMIN AND CANAGLIFLOZIN IN PHARMACEUTICAL DOSAGE FORM

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A new method was established for simultaneous estimation of Metformin and Canagliflozin by RP-HPLC method. The chromatographic conditions were successfully developed for the separation of Metformin and Canagliflozin by using SYMMETRY C18 column (4.6 × 150mm) 5μ, flow rate was 1ml/min, mobile phase ratio was (70:30 v/v) methanol: phosphate buffer (KH2PO4and K2HPO4) phosphate pH 3 (pH was adjusted with orthophosphoricacid),detection wavelength was 240nm. The % purity of Metformin and Canagliflozin was found to be 99.87% and 100.27% respectively. The analytical method was validated according to ICH guidelines (ICH, Q2 (R1)). The linearity study of Metformin and Canagliflozin was found in concentration range of 50μg-250μg and 5μg-25μg and correlation coefficient (r2) was found to be 0.999 and 0.999, % recovery was found to be 99.56% and 99.48%, %RSD for repeatability was 0.3and 0.3, % RSD for intermediate precision was 1.3 and 0.4respectively. The precision study was precision, robustness and repeatabilty. LOD value was 2.17 and 0.0372 and LOQ value was 6.60 and 0.1125 respectively.

Key words: Metformin, Canagliflozin, HPLC, Methanol.

ACB 36

DEVELOPMENT OF NOVEL CHIRALANALYTICAL METHODS FO PROTECTED AMINO ACIDSUSING CHIRAL STATIONARY PHASES IN REVERSED-PHASE CHROMATOGRAPHICMODE

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Enantio separation of amino acids by using chiral stationary phases (CSPs) has gained increasing importance in the pharmaceutical industry. To developa Chiral HPLC method for separating the isomers by using different chiral columnshas been exhaustively investigated in both aqueous and non-aqueous polar organic mobile phases by using immobilized CHIRALPAK I A, IB-N, IC,ID IE, IF,IG, IH, IJ , IK & QN-AX chiral stationary phases. The chiral selector for the CHIRALPAK QN-AX is O-9-tert-butyl carbamate of quinine immobilized on 5 μm spherical silica gelas shown in the below figure. The column has been exhaustively investigated in HPLC in both aqueous and non-aqueous/polar organic mobile phases. After the development,to improve the resolution, the effect of additives, temperature, along withmobile phase composition changes were optimized. The ionic exchange interactions between the protonated tertiary nitrogen of the quinuclidine moiety of the chiral selector and the anionic analytesplay a key role in better selectivity.In addition, ion-pairing is accomplished by additional intermolecular interactions including hydrogen bonding, dipole-dipole, p-p, hydrophobic as well as steric interactions.The present study also includes the Investigated the elution order between QN-AX and QD-AXstationary phase. The advantages of these columns includesmulti-modal compatibility, easeof use, high durability, and Capability to use in the LC-MS detection mode and the stationary phases are compact with different modes of operation and easily regenerated for better selectivity and repeatability.

Keywords: chiral stationary phases, intermolecular interactions, protonated tertiary nitrogen

ACB 37

METHOD DEVELOPMENT AND VALIDATION FOR ANTI DIABETIC DRUGS BY RP- HPLC

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This study reports the Method Development and Validation For Anti Diabetic Drugs By Rp-Hplc. The drug analysis is playing an vital position within the improvement of medicine, their manufacture and therapeutic use For the simultaneous estimation of medicine present in dosage forms, lot, of suitable techniques are adopted like uv spectrophotometer HPLC. Those techniques are powerful rugged technique .they're additionally extraordinarily specific, specific, correct, linear and speedy. A pharmaceutical industry depends upon quantitative chemical analysis to make sure that the raw material used and the final product obtained meets the required specification. The drugs will occur as a unmarried factor or multi issue dosage paperwork. The later proves to be effective because of its mixed mode of movement at the body.

Keywords: Validation, RP-HPLC method, Gliclazide, Sitagliptin, Anti Diabetic Drugs

ACB 38

PROFOUND ANALYSIS OF ANTICANCER COCRYSTAL OF ADD-NA AND ITS EVALUATION.

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Worldwide, 19.3 million new cancer cases and nearly 10 million cancer deaths were reported in 2020, according to Global Observatory Cancer (GLOBOCAN) statistics. Additionally, studies by the National Cancer Institute (NCI) in 2024 showed that approximately 25% of cancer patients suffer from depression, which is often overlooked. Hence, this study aimed to prepare a combinatorial therapeutic formulation for the management of cancer-related depression. A well-known antidepressant drug (ADD) was chosen as a model drug to treat depression in cancer patients. Recent studies have also shown that ADD possesses anti-cancer effects, making it a candidate for repurposing to treat cancer. Therefore, to design a cocrystal with this ADD drug, a suitable GRAS (Generally Recognized as Safe) conformer with both anticancer and antidepressant properties was selected. So, napthoic acid (NA) was chosen as the conformer for this study.The cocrystal of ADD and NA in a 1:1 ratio was developed using slow-solvent evaporation method and analyzed through various analytical techniques PXRD, DSC, FTIR, TGA, and SC-XRD. Solubility, permeability, and in-vitro dissolution studies were performed on the cocrystal formulation. The potential anticancer activity of cocrystal formulation was assessed through the in-vitro cell culture MTT assay on various cancer cell lines, including MDA-MB 231 (breast cancer), PC3 (prostate cancer), and A549 (lung cancer). All the above analytical techniques proved the formation of a new crystalline phase of the cocrystal, and SC-XRD specifically confirmed it. The results of the MTT assays demonstrated that the cocrystal formulation has significant potential as an anticancer agent.The developed cocrystal might find clinical benefit in managing cancer and cancer-related depression.

Keywords: Napthoic acid, Cancer, Depression, SC-XRD, Cocrystal.

ACB 39

RP-HPLC METHOD DEVELOPMENT AND VALIDATION FOR THE SIMULTANEOUS ESTIMATION OF AMOLODIPINE VALASARTAN AND HYDROCHLOROTHIAZIDE IN ITS PHARMACEUTICAL DOSAGE FORM

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Hydrochlorothiazide & Valsartan was freely soluble in water and alcohol . Amlodipine was freely soluble in alcohol and sparingly soluble in water. Methanol and potassium dihydrogen ortho phosphate(pH 3) was chosen as the mobile phase. The run time of the HPLC procedure was 5 minutes. The method was validated for system suitability, linearity, precision, accuracy, specificity, ruggedness robustness, LOD and LOQ. The system suitability parameters were within limit, hence it was concluded that the system was suitable to perform the assay. The method shows linearity between the concentration range of 10-100 μg / ml. The % recovery of Hydrochlorothiazide, Amlodipine and Valsartan were found to be in the range of 99.22 % - 100.11 %. As there was no interference due to excipients and mobile phase, the method was found to be specific. The method was robust and rugged as observed from insignificant variation in the results of analysis by changes in Flow rate and Mobile phase composition separately and analysis being performed by different analysts.

Keywords: Hydrochlorothiazide, Valsartan, Amlodipine, RP-HPLC,Methanol.

ACB 40

ANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR ESTIMATION OF B-SITOSTEROL IN ACID MUKTI TABLETS, AN AYURVEDIC FORMULATION BY USING RP-HPLC

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The herbal formulations for gastric problems are used by common people as health supplements to protect from side effects of allopathis medicines. Acid Mukti tablets are one such Ayurvedic herbal formulation available in market. As herbal preparations lack standardisation procedures, the current study was planned to develop and validate a reversed-phase high-performance liquid chromatography method for the estimation of β-sitosterol as a marker component. The polyherbal formulation contains components such as mukta shukti pisti, calcinated pearl powder, shalmali resin from silk cotton tree, Bombax ceiba, trikatu a combined herbal made of ginger, pepper, pippali, dalchini from cinnamon bark, Cinnamomum zeylanicum, amla, Emblica officinalis, yastimadhu. Liquorice roots and rhizomes Glycyrrhiza glabra, shatavari, roots, Asparagus racemosus. guduchi stems Tinospora cordifolia. Each herbal was evaluated and validated for the marker. The analysis was performed on a C8 column using the mobile phase consisting of solvent A (acetonitrile) and solvent B (water) with the gradient 70:30 at a flow rate of 2 ml/min. Ultraviolet detection was at 205 nm. The method was validated for accuracy, precision, linearity, specificity, and sensitivity as per the norms of the International Conference on Harmonization. From the validation study, it was found that the method is specific, accurate, precise, reliable, and reproducible. Good linear correlation coefficients r2 > 0.996 were obtained for calibration plots in the ranges tested. Limits of detection were 0.00059 µg/ml and limits of quantification were 0.00167 µg/ml for β-sitosterol. Intra and interday relative standard deviation (RSD) of retention times and peak areas was 0.00082%. Recovery was found to be 99.0% for β-sitosterol. The established method was appropriate and the marker was well resolved, enabling efficient quantitative analysis of β-sitosterol. The method is a rapid and cost-effective quality control tool for routine quantitative analysis of β-sitosterol in marketed formulation containing the mentioned herbs.

Keywords: Acid mukti tablets, standardization, β-sitosterol, high-performance liquid chromatography.

ACB 41

METHOD DEVELOPMENT AND VALIDATION FOR SIMULTANEOUS ESTIMATON OF LEVOCETRIZINE DIHYDROGEN CHLORIDE AND ESCITALOPRAM OXALATE IN PHARMACEUTICAL DOSAGE FORMS

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A simple, accurate, precise method was developed for the simultaneous estimation of the Levocitirizine dihydrogen chloride in tablet dosage form. Chromatogram was run through: column Symmetry C18 (250 mm 4.6 mm, 5μ) mobile phase containing buffer and acetonitrile in the ratio of 80:20 A was pumped through column at a flow rate of 1.5ml/min. Buffer used in this method was 0.01N KH2PO4 buffer at ph 4.2 Temperature was maintained at 30°c. Optimized wavelength for Levocitirizine dihydrogen chloride was 230nm. Retention time of Levocitirizine dihydrogen chloride was found to be 12.9 min %rsd of the Levocitirizine dihydrogen chloride were and found to be 0.50 respectively. %recover was obtained as 98.7% for Levocitirizine dihydrogen chloride respectively. Escitalopram Oxalate in tablet dosage form. Chromatogram was run through : column Alltima C8(150 mm 4.6 mm, 5μ) mobile phase containing buffer and acetonitrile in the ratio of 60:40 A was pumped through column at a flow rate of 1.0ml/min. Buffer used in this method was 0.01N NH2PO4 buffer at ph 2.5 Temperature was maintained at 30°c. Optimized wavelength for Escitalopram Oxalate was 255 nm. Retention time of Escitalopram Oxalate was found to be 13.47 min %rsd of the Escitalopram Oxalate were and found to be 0.46 respectively. %recover was obtained as 98.06% for Escitalopram Oxalate respectively

Keywords: Levocitirizine dihydrogen chloride, Escitalopram oxalate,

ACB 42

MICROWAVE ASSISTED SYNTHESIS, CHARACTERIZATION AND SCREENING OF ANTIBACTERIAL AND ANTIOXIDANT ACTIVITY OF CHALCONE DERIVATIVES

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Microwave-assisted synthesis has gained significant attention in recent years due to its efficiency and effectiveness in producing various chemical compounds. In this study, microwave-assisted synthesis was utilized to prepare chalcone derivatives, which are known for their potential antibacterial and antioxidant properties. The synthesized chalcone derivatives were subjected to screening tests to evaluate their antibacterial and antioxidant activities. The antibacterial activity was assessed against a panel of bacterial strains, while the antioxidant activity was determined using established assays such as DPPH scavenging activity and total antioxidant capacity.The results of the screening tests revealed promising antibacterial and antioxidant activities of the synthesized chalcone derivatives. These findings suggest that microwave-assisted synthesis is a viable method for producing bioactive compounds with potential applications in pharmaceutical and nutraceutical industries.Overall, this study highlights the importance of microwave-assisted synthesis in the preparation of chalcone derivatives with enhanced antibacterial and antioxidant properties. Further research and development in this area could lead to the discovery of novel therapeutic agents with significant health benefits.

Keywords: Chalcone, antibacterial , antioxidant activity, microwave assisted synthesis

ACB 43

DESIGN, SYNTHESIS, AND BIOLOGICAL EVALUATION OF NOVEL SULFUR-NITROGEN HETEROCYCLIC COMPOUNDS

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The synthesis and characterization of new chalcone derivatives bearing 2,4-thiozolidinedione are proposed by leveraging selected drugs and various catalysts. This research aims to determine the most active components through detailed investigation. The designed 2,4-thiozolidinedione derivatives will be evaluated for their antimicrobial activity, with an emphasis on their potential as broad-spectrum, biologically relevant drug-like molecules. These derivatives are anticipated to be synthesized on a large scale using cost-effective reagents. The initial transformation of thiazolidine-2,4-diones into chalcones will allow for the attachment of various aromatic and heterocyclic groups, such as naphthalene and quinoline, through methylene linkages.The synthetic approach primarily employs Knoevenagel condensation and C-N bond formation as key methodologies to enhance the medicinal chemistry profile of the compounds. This strategy offers a metal-free, cost-efficient route to synthesize thiazolidine-2,4-diones derivatives, particularly those based on the naphthalene scaffold. The efficient and economical synthesis process adds to the appeal of these derivatives as viable candidates for drug development.Literature reviews indicate that certain thiazolidine-2,4-dione derivatives exhibit significant activity against Mycobacterium tuberculosis, the causative agent of tuberculosis in humans. This suggests that the thiazolidine-2,4-diones naphthalene derivatives hold promise as a platform for developing new anti-tuberculosis drugs. The broad synthetic utility and cost-effective production of this scaffold further underscore its potential in creating new therapeutic agents for various infectious diseases. Overall, the proposed research underscores the potential of thiazolidine-2,4-dione derivatives in medicinal chemistry, particularly for developing new, effective antimicrobial therapies.

Keywords: Thiazolidine-2,4-dione, Knoevenagel,Quinoline ,Mycobacterium tuberculosis

ACB 44

INVITRO AND IN SILICO EVALUATION OF UMBELLIFERONE MICROSPHERES FOR ENHANCED BIOAVAILABILITY

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Umbelliferone is a 7-Hydroxycoumarin that is a pharmacologically active agent. It is widely distributed within the Rutacea and Apiaceae families. Umbelliferone is significant for its various biological properties, including its role as a precursor in the synthesis of coumarin derivatives, which have pharmaceutical applications. It also exhibits antioxidant, anti- inflammatory, and antimicrobial properties, making it a valuable compound in both medicinal and cosmetic industries. Umbelliferone microspheres have significance in drug delivery due to their controlled release properties, potential for targeted therapy, and ability to improve drug stability. They're particularly useful in pharmaceuticals and biomedicine for enhancing the efficacy of drugs and reducing side effects. We observed more Microspheres in 1:3 ratio and that sample we have given for zeta potential. Zeta potential is crucial in microspheres as it influences their stability, dispersibility, and interactions with surrounding molecules. It indicates the surface charge of the particles, affecting their aggregation, sedimentation, and ability to adhere to surfaces. Controlling zeta potential helps optimize properties like drug release kinetics and targeted delivery in various biomedical applications.Further the experimental results are correlated by computational studies.

Keywords: Umbelliferone, Coumarin derivatives, Microspheres, Computational studies, 7-Hydroxycoumarin.

ACB 45

A VALIDATED UPLC-MS METHOD FOR RELIABLE QUANTIFICATION OF TOPIROXOSTAT IN TABLETS

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Topiroxostat, a medication for gout and hyperuricemia, requires reliable quantification in tablets for quality control and potentially understanding its behavior in the body. Traditional methods for Topiroxostat analysis, have limitations in sensitivity and resolution. This study addresses this need by developing and validating a sensitive and specific UPLC-MS method for analyzing Topiroxostat in tablets. A study by [Gajera Dipali et al] in [2023] described an HPLC method with UV detection for Topiroxostat in bulk and pharmaceutical dosage forms exhibited lower sensitivity compared to UPLC-MS. Another study by [Feng, et al] in [2020] employed HPLC-tandem mass spectrometry (HPLC-MS/MS) for Topiroxostat analysis in human plasma is specifically designed for biological samples and may not be directly applicable to tablets. Chromatographic separation utilized a YMC Pack Pro C18 column and a mobile phase consisting of 0.1% formic acid in water and acetonitrile (40:60 v/v) at a flow rate of 1.0 mL/min. Detection employed Electrospray Ionization (ESI+) in positive mode with Selective Ion Monitoring (SIM) targeting the m/z 461.70 ion. Fragmentor voltage, gain, capillary voltage, corona current, gas temperatures, nebulization pressure, and drying gas flow were optimized for sensitive detection. The UPLC-MS method developed in this study demonstrated excellent linearity (R^2 = 0.9994) within the concentration range of 80-150 ng/mL, indicating a strong proportional relationship between the amount of Topiroxostat and the instrument's response. Further, the method exhibited high precision with relative standard deviation (RSD) values below 1.98%, demonstrating good repeatability of the analysis. This validated UPLC-MS method offers a reliable and efficient approach for quantifying Topiroxostat in tablets, with excellent linearity, precision, and optimized detection parameters. This method provides potential to facilitate quality control and pharmacokinetic studies of Topiroxostat.

Keywords: Topiroxostat, UPLC-MS, Electrospray Ionization, capillary voltage, Fragmentor voltage

ACB 46

EVALUATION OF ANTI-OBESITY POTENTIAL OF METHANOLIC EXTRACT OF TAGETES PATULA L. FLOWER: AN IN SILICO AND IN VITRO STUDY

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Obesity is a complex disease, caused by an imbalance between energy intake and energy consumption in the human body thus leading to one of the prominent diseases that affect the world. Therefore, the major concern of today's public health is to find an effective and safe treatment as an anti-obesity drug. Targeting one or more enzymes involved in lipid metabolism can be selective for evaluation of anti-obesity action of drug. The present study was aimed to evaluate the in silico and in vitro anti-obesity potential of methanolic extract of Tagetes patula (METP) flowers by inhibiting lipid peroxidation and -amylase enzyme along with their phytochemical analysis. The methanolic extract of Tagetes patula flowers were analyzed for qualitative, as well as, quantitative phytochemical study using reported methods. The qualitative phytochemical studies of METP showed presence of flavonoids, alkaloids, anthocyanins, and phytosterols. Molecular docking was performed by selected ligands that can bind with fat mass and obesity associated protein (PDB ID: 3LFM) using Autodock Vina followed by BIOVIA discovery studio. The highest docking scores were shown by the flavonoid Quercetin (-9.2). The anti-obesity effects were experimentally validated through in vitro studies, which revealed a better lipid peroxidation inhibition and α-amylase inhibition pointing to their strong potential in management of anti-obesity.

Keywords: Flavonoids, anti-obesity, molecular docking, pancreatic enzymes

ACB 47

IN-SILICO AND ADMET ANALYSIS OF NEWER 1,4-DIHYDROPYRIDINE DERIVATIVES FOR THE TREATMENT OF ANGINA PECTORIS

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Drug research and development is a complex, time-consuming, and multidisciplinary endeavour. Recently, the use of in-silico chemistry and molecular modelling for computer-aided drug creation has acquired substantial traction. Nanotechnology, molecular biology, biochemistry, and other fields all benefit from in-silico drug creation skills. In this Present Research Investigation, we provide an outline of the most essential CADD methodologies and applications, such as in silico structure prediction, refinement, modeling, and target validation that are extensively employed in this field. Nisoldipine, a calcium channel blocker derived from Dihydropyridine and used to treat hypertension and angina, has been chosen as the parent drug for the current research investigation. The main goal of the study is identifying the parent compound's derivatives through Ligand based search and to separate out a superior compound from the group that has higher solubility and predicted therapeutic efficacy than the parent compound via ZINC database and insilico ADMET softwares. Out of twenty Derivatives, the best compound was chosen based on the conclusions mentioned above.

Keywords: Insilico, Molecular Docking, computer aided Drug Discovery.

ACB 48

TARGETTING 2L98 & 4YHJ: NOVEL RESVERATROL DITHIOCARBAMATE DERIVATIVES AS POTENTIAL NEW LEADS FOR CARDIOVASCULAR DISEASE

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Phytochemicals are an attractive source to discover new leads for the development of novel compounds for various diseases. Cardiovascular diseases are the principal cause of morbidity and mortality worldwide. Resveratrol is a stilbene, which is a type of natural polyphenolic compound, used for cancer therapy, and it has shown useful effects against cardiovascular diseases. Otherside Dithiocarbamates obtained from phytoalexins exhibited diverse pharmacological profiles. So, we thought it's worthwhile to combine two natural compounds resveratrol and dithiocarbamate as a single entity to develop novel cardiovascular agents. All the designed compounds were subjected to various pharmacokinetics and pharmacodynamic properties by using Insilco tools. Further Molecular docking studies were performed to know the suitable target for the cardiovascular disease. All the compounds obeyed Lipinski rule of five and among the series, compound 26 and 30 are more potent when compared to dock score of the standard drug resveratrol against selected targets, G protein-coupled receptor kinase 4 (2L98), Cardiac troponin (4YHJ) of cardiovascular disease. The present investigations concluded that the designed resveratrol dithio derivatives are the effective and bioavailable molecules.

Keywords: Resveratrol, Dithiocarbamate, Drug likeness, AutodockVina, Discovery studio.

ACB 49

EXPLORING SILVER NANOPARTICLES: GREEN SYNTHESIS, CHARACTERIZATION AND EVALUATION THROUGH IN VIVO & IN SILICO APPROACH

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Green synthesis of silver nanoparticles (AgNPs) utilizing natural extracts, such as plant extracts or microbial sources, as reducing agents, offers a sustainable and cost-effective approach while eliminating the use of hazardous chemicals. This method finds applications across diverse fields including medicine, catalysis, and electronics. Ellagic acid, a naturally occurring polyphenolic compound abundant in fruits such as strawberries, raspberries, and pomegranates, demonstrates significant therapeutic potential. In this study, ellagic acid was employed in the synthesis of silver nanoparticles following a Quality by Design (QbD) approach, aiming to integrate in vivo and in silico studies. The formulation of ellagic acid silver nanoparticles was systematically designed using QbD principles. Characterization studies were conducted employing analytical techniques including Ultraviolet (UV) spectroscopy, Fourier-transform infrared spectroscopy (FTIR), Particle Size analysis (Zeta size), and Scanning Electron Microscopy (SEM). Further investigations into the in vivo activity of the synthesized silver nanoparticles were undertaken, presenting a comprehensive approach towards their potential applications.

Keywords: Green synthesis, Silver nanoparticles, Quality by Design, Fourier-transform infrared spectroscopy, Scanning Electron Microscopy

ACB 50

ANALYTICAL METHOD FOR THE SIMULTANEOUS ESTIMATION OF PREGABALIN AND METHYLCOBALAMIN BY RP-HPLC.

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A Rapid and Precise Reverse Phase High Performance Liquid Chromatographic method has been developed for the validated of Pregabalin and Methylcobalamin, in its pure form as well as in tablet dosage form. Chromatography was carried out on X-Terra C18 (4.6 x 150mm, 5μm) column using a mixture of Methanol : TEA Buffer pH 4.5: Acetonitrile (65:15:20) as the mobile phase at a flow rate of 1.0ml/min, the detection was carried out at 212 nm. The retention time of the Pregabalin and Methylcobalamin was 2.090, 5.289 $\pm$0.02min respectively. The method produce linear responses in the concentration range of 5-25ppm of Pregabalin and 50-250ppm of Methylcobalamin. The method precision for the determination of assay was below 2.0% RSD. The method is useful in the quality control of bulk and pharmaceutical formulations.

Keywords: Pregabalin, Methylcobalamin, RP-HPLC, validation.

ACB 51

SENSITIVE AND REPRODUCIBLE STUDY FOR UV-SPECTROPHOTOMETRIC METHOD FOR ANALYSIS OF CLOPIDOGREL AND METOPROLOL IN A COMBINED TABLET DOSAGE FORM

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The USP has suggested that the reduction in amount of reagents and materials which are routinely used in HPLC assays that have the potential to cause harm to human health and environment. Therefore, spectrophotometry as a simple, robust, quick and low cost method may be a good alternative if it is combined with calibration methods for determination of a complex mixture in pharmaceutical quality control laboratories. This study is useful because these two drugs are commonly administered simultaneously. The UV spectrophotometric analysis is often preferred in quality control testing and ordinary laboratories due to its broader availability, suitability and ease of use. With the aim of the present investigation is to develop a simple, sensitive and reproducible UV Spectrophotometric method for analysis of Clopidogrel (CLOP) and Metoprolol (METO) in a combined tablet dosage form and hence an economical method was developed and validated according to the ICH guidelines.

Keywords: Clopidogrel, Metoprolol, UV Spectrophotometry, Validation.

ACB 52

IN SILICO DESIGN, SYNTHESIS, CHARACTERIZATION AND BIOLOGICAL EVALUATION OF COUMARIN DERIVATIVES

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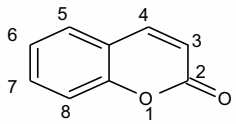
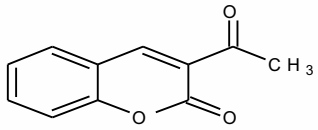
Coumarin and its derivatives are remarkable because of their extensive biological activities such as antidiabetic, antiallergic, anticoagulant, anticancer, antioxidant, antimicrobial and antifungal activities. For this study, we designed Coumarin Derivatives, and analyzed for Insilico ADMET properties to know their oral drug like properties. The Analysis exposed that coumarin derivatives have good drug like properties and could

be developed as oral drug candidates. Molecular docking investigations of designed coumarin derivatives displayed remarkable inhibition ability towards COX-2 with the binding energy of -10.6 to -9.5 kcal/mol. (4a, 4c, 4d, 4f, 4g, 4h, 4i, 4j, 4k, 5, 6a, 6b, 6c) more than standard indomethacin. 3-acetyl Coumarin Derivatives (4i – l), 5, (6a – c) were synthesized characterized by IR, 1H NMR and Mass spectral data and evaluated for antimicrobial activity against three bacterial strains S. aureus, Salmonella Typhi, K.pneumonia The compound 6(b) showed highest inhibition towards S.aureus, Compound 4 (i), 4(l) and 5 showed highest inhibition against Salmonella typhi . Compound 4 (i), 4(j), 5, 6(a) and 6 (c) showed highest inhibition towards K.Pneumoniae than the standard. This attempt is to select the drug molecule that shows the desired therapeutic effect.



Coumarin



3 acetyl coumarin

Key words: Coumarin, Drug like Properties, Molecular Docking

ACB 53

ANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR IN-HOUSE PREPARED ESOMEPRAZOLE MICROSPHERES BY USING UV-SPECTROPHOTOMETRIC METHOD

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A simple, sensitive UV- spectrophotometric technique was developed and validated to measure Esomeprazole in bulk and Esomeprazole-loaded In-house Microspheres by using UV- Visible spectrophotometer. UV detection was carried out at 299 nm. All the analytical parameters were performed according to ICH (Q2R1) guidelines. LOD and LOQ were determined from the regression equation and standard deviation. The linearity range was 2-30 µg/ml for the UV method the %RSD was found to be less than 2. The regression equation was found to be y = 0.0504x - 0.0601 & correlation coefficient (r2) was 0.999 for the UV method. %Recovery was 98.1-99.23. % Assay was found to be within limits for both. % Assay was also done for in-house microspheres and it was found to be 97%. Forced degradation studies were also conducted on standard Esomeprazole and the percentage of the drug's deterioration under multiple stressful conditions, including oxidation, thermal and photo degradation, and acid and alkali hydrolysis, was measured.

Keywords: Esomeprazole, UV-spectrophotometric, forced degradation studies, In-house microspheres

ACB 54

3D BIO PRINTING-PAST, PRESENT AND FUTURE PERSPECTIVE

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3D bioprinting is a rapidly developing segment of the industry. 3D bioprinting is a promising approach in medicine, tissue regeneration, and organ transplantation. This technology also known as tissue engineering is used to regenerate artificial organs created using a variety of techniques used to create artificial bone, cartilage, liver, and cornea. 3D bioprinting is a key or kind of platform technology for identifying various diseases and creating relevant 3D models that perform the same function as the original organ. Research in this area shows the rapid growth of modern medicine, the systematic success of model development in the field of science and technology. 3D bioprinting is a traditional technology used in the medical system. There are various scanning techniques that may create 3D models. This system could be useful in medical systems due to the powerful printing technology these printers can use to create 3D models. Today bioprinting technology is an innovative solution for the medical system that supports the continuous regeneration of organ tissue. Gene therapy of cancer implants, skin and blood vessels can be used as an adjunctive therapy due to the application of bioprinting in tissue regeneration. Artificial cells are used for cancer therapy.

Keywords: Bioprinting, 3D Scaffold, Bioink, Tissue Regeneration, Imaging Techniques

ACB 55

QUANTIFICATION OF TOLVAPTAN IN K2EDTA HUMAN PLASMA BY USING LIQUID CHROMATOGRAPHIC TANDEM MASS SPECTROMETRY (LC-MS/MS) METHOD

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A robust Liquid Chromatographic Tandem Mass Spectrometry (LC-MS/MS) method has been developed for the determination of Tolvaptan in K2EDTA human plasma. Tolvaptan D7 was used as the internal standard. 100 L of plasma containing Tolvaptan was spiked with Tolvaptan D7 as internal standard and extracted with Protein Precipitation extraction technique. The chromatographic separation was achieved on analytical column Teknokroma Mediterranea SEA C18 analytical column (5x0.46cm 3μm) with Mobile Phase (Methanol: 0.1% Formic acid in a 75:25 ratio. Turbo Ion spray (TIS/ESI) in positive ion mode was selected to improve the selectivity and the sensitivity required for this application. The method demonstrated a lower limit of quantification of 2.002 ng/mL and confirmed linearity over a concentration range of 2.002 ng/mL to 2001.362 ng/mL with a 1/x^2 linear regression model, making it suitable for accurate and reliable measurement of Tolvaptan in human plasma.

Keywords: K2EDTA human plasma, Tolvaptan, Protein Precipitation extraction, LC-MS/MS.

ACB 56

DEVELOPMENT AND VALIDATION OF Q-ABSORBANCE RATIO SPECTROPHOTOMETRIC METHOD FOR SIMULTANEOUS ESTIMATION OF DAPAGLIFLOZIN AND VILDAGLIPTIN IN BULK AND COMBINED DOSAGE FORM

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Dapagliflozin and Vildagliptin are anti-diabetic medications utilized for treating individuals with T2DM (Type-2 Diabetes Mellitus). Dapagliflozin lowers glucose levels in blood and improve the glucose excretion in urine. Vildagliptin causes extended enzyme inhibition by binding covalently to the DPP-4 catalytic site. For those with high blood sugar who are not responsive to either medicine alone, a combination of Dapagliflozin and Vildagliptin is used. Using a UV-visible spectrophotometer, a straightforward, accurate, and simultaneous equation technique has been devised for the instantaneous estimate of Dapagliflozin and Vildagliptin in bulk and combination tablet dose form. The ICHQ2 (R1) recommendations have been followed for all validation parameters. To determine the drug release per unit of time, the combination tablet dosage form was dissolved. Diluents such as Methanol: water (15:85) has been employed. The % of recovery in bio samples is determined using the protein precipitation method. Vildagliptin and Dapagliflozin respective λmax values were determined to be 195 and 220 nm. Dapagliflozin and Vildagliptin were found to have slope values of 0.046 and 0.025, respectively. Vildagliptin and Dapagliflozin were shown to have an R2 of 0.999. RSD for Dapagliflozin and Vildagliptin were determined to be 1.051663 & 1.976424, respectively. Recovery for both drugs was found to be 100-102 percent. The combination tablet's drug release was determined to be linear.

Keywords: UV-visible spectrophotometer, Dapagliflozin, Vildagliptin, Simultaneous estimation, Dissolution.

ACB 57

A REVIEW ON ARTIFICIAL NEURAL NETWORK

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Artificial Neural Networks (ANNs) have been used to support applications across a variety of business and scientific disciplines during the past years. The utilization of artificial neural networks (ANNs) has gained widespread popularity in various domains because it is based on the combination of intelligent control and the working principle of the neurons in a brain. Neural networks (ANNs) are computer systems developed to mimic the operations of the human brain by mathematically modelling its neurophysiological structure. Neural have seen an explosion of interest over the last few years and are being successfully applied across an extraordinary range of problem domains of medicine, engineering, physics, biology, and pharmacy. (ANNs) have been very useful in many aspects of pharmaceutical research, including analytical data analysis, pharmaceutical product and process optimization and manufacturing, pharmacokinetic and pharmacodynamic modelling, and in vitro-in vivo correlations.

Keywords: Artificial Neural Networks, Neurophysiological Structure, Correlation, Domains

ACB 58

GREEN SYNTHESIS OF COPPER NANOPARTICLES USING CURCUMA LONGA (TUMERIC) PEEL EXTRACTS ITS CHACTERIZATION, ANTIMICROBIAL AND ANTIOXDIANT STUDIES.

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Production of nanoparticles using rhizomes is a new area of interest. Curcuma longa (Turmeric) peel extract was used foe biosynthesis of copper nanoparticles. Green synthesis of copper nanoparticles is considered as an eco-friendly method using materials from rhizomes and other natural sources without using any harmful chemicals. It is a medicinal plant extensively used in Ayurveda Unani, siddha medicine as a home remedy for various diseases including biliary disorders, anorexia, cough, diabetic wounds, hepatic disorders, rheumatism, and sinusitis. It has many medicinal values such as antioxidant activity, cardiovascular activity, anti-inflammatory and antimicrobial effect. Present paper discuss about the green synthesis of copper nanoparticles using Curcuma longa (Turmeric) peel extract, its characterization by analytical studies, antimicrobial and antioxidant studies. Curcuma longa (Turmeric) peel extract also subjected to phytochemical screening. The active constituents present in peel extract were identified as alkaloids, glycosides, phenolics, flavonoids, proteins and carbohydrates. Nano particles were characterized by UV-Visible Spectroscopy, FT-IR and SEM studies. In the UV visible spectrometer absorption peak was observed at 420nmwhich is specific for Copper nanoparticles. Synthesized Copper nanoparticles were subjected to FT-IR analysis to detect the various characteristic functional group associated with the synthesized nanoparticles. The peaks indicate the characteristics functional group present in the copper nanoparticles. Synthesized Copper nanoparticles were subjected to scanning electron microscopy (SEM) to determine the morphology and particle size of nanoparticles. It can be seen that all the particles were in spherical shape with particle size distribution. The variation in size may be due to decreased amount of capping agents. The antimicrobial properties of the particles were determined using agar well diffusion and the disc diffusion method using Streptococci bacteria and E.coli bacteria. The green synthesized copper nanoparticles showed antimicrobial activity against both Streptococci and E.coli bacteria. The copper nanoparticles showed more activity against E.coli bacteria compared to Streptococci bacteria. The antioxidant activity of nanoparticles was performed using Phosphomolybdate assay, Hydrogen peroxide Assay and total phenolic content method, indicates the presence of antioxidant properties.

Keywords: nanoparticles, Curcuma longa (Turmeric), Green synthesis, FT-IR and SEM studies.

ACB 59

A NOVEL STABILITY INDICATING RP-UPLC METHOD FOR SIMULTANEOUS ESTIMATION OF TELMISARTAN AND AZELNIDIPINE IN BULK AND THEIR COMBINED FILM COATED BILAYER TABLET DOSAGE FORM

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An efficient, perceptive, sensitive, accurate and economical RP-UPLC method with tunable UV detector has been developed for the simultaneous estimation of telmisartan and azelnidipine in bulk powders and their combined film-coated bilayer tablet dosage form. The proposed method employs Agilent Zorbax Stable Bond (SB) packing C8 (100 mm × 2.1 mm, 2 µm) column, a mobile phase consisting of 0.01 N potassium dihydrogen orthophosphate (pH 4.8) and acetonitrile in 70:30 v/v ratio pumped at a flow rate of 0.3 mL/min, and the UV detector tuned to 257 nm wavelength, which reliably separates all analytes with good resolution. Telmisartan and azelnidipine were eluted from the column at 0.675 and 1.601 min, respectively. Linearity of the telmisartan and azelnidipine determination was observed in the range of 20 – 120 µg/mL and 2 – 12 µg/mL, respectively. Computed values of the validation parameters confidently show that the method is specific, accurate and precise with high sensitivity. Exploration of the analytes under various forced degradation conditions with the help of the proposed method confirms stability-indicating character of the method. The developed method has high efficiency in separating telmisartan and azelnidipine and ensures their stability-indicating assay with good sensitivity and specificity, thus being adapted to the pharmaceutical industry applications.

Keywords: Azelnidipine, Telmisartan, RP-UPLC, Stability-indicating, Method validation.

ACB 60

NOVEL CHROMOGENIC METHOD DEVELOPMENT AND VALIDATION OF VALACICLOVIR IN BULK, AND FORMULATION USING 3-METHYL-2-BENOTHIAZOLINONE HYDRAZONE REAGENT IN UV-VISIBLE SPECTROSCOPY

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Valaciclovir is a purine-based nucleoside antiviral agent used in the management of Herpes simplex and other viral infections. The present study is aimed at developing and validating a simple and rapid spectrophotometric method for its determination. The mechanism of the proposed method is based on the condensation/coupling reaction between Valaciclovir and MBTH reagent in the presence of Ferric Ammonium sulphate through the oxidative mechanism, resulting in the formation of green coloured solution with a maximum absorption peak at 618nm. Valaciclovir has a linearity range of 10-500µg/ml and a correlation coefficient of 0.9997. When valaciclovir was measured precisely, the result was less than 2. The ICH guidelines Q2R1 are followed in the validation of this approach. The protein precipitation extraction method was used to design, validate, and expand the improved procedure to biological material. Valaciclovir + MBTH Reagent + Ferric Ammonium Sulphate + Sulphamic Acid ➔ Green Coloured Complex

Keywords: UV-spectrophotometer, valaciclovir, 3-methyl-2 benothiazolinone hydrazone

ACB 61

SENSITIVE CHROMOGENIC METHOD DEVELOPMENT AND VALIDATION FOR THE ESTIMATION OF VITAMIN A IN THE FOOD PRODUCTS

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A simple and sensitive UV-visible spectroscopic method for the assay of Retinol Acetate in pure and pharmaceutical formulations based on the reaction between OH group in the Retinol Acetate drug with MBTH reagent at cool temperature gives coloured complex. Retinol Acetate + MBTH Reagent + Ferric Ammonium Sulphate + Sulphamic Acid ➔ Coloured Complex. The reaction between a chromogenic reagent and a drug is often specific to certain functional groups or chemical structures, allowing for selective detection and measurement MBTH Reagent. MBTH Reagent is chromogenic reagent used for colorimetric estimation of drug containing Hydroxyl groups, phenolic, aromatic amines and active methylene groups. Retinol acetate (retinol acetate, vitamin A acetate) is a natural of vitamin A which is the acetate ester of retinol. Retinol acetate, like other forms of vitamin A, plays a crucial role in various biological processes, including vision, immune function, skin health, and reproduction. It is essential for maintaining healthy skin, mucous membranes, andvision.

Keywords:UV Spectrophotometer, Retinol Acetate, 3-methyl-2-benothiazolinone hydrazone.

ACB 62

SYNTHESIS AND CHARACTERISATION OF CINNAMOYL FUSED THIADIAZOLE DERIVATIVES

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1,3,4-thiadiazole is a hetero aromatic compound of thiadiazole class. The present work involves the synthesis of thiadiazoles in the laboratory by condensing thiosemicarbazide and substituted carboxylic acids in the presence of concentrated sulfuric acid. These substituted thiadiazoles are then condensed with substituted cinnamoyl chlorides to give thiadiazole cinnamoyl amides. The enone group in the compounds is then cyclized to pyrazoline moiety. These derivatives are characterized by IR spectroscopy.

keywords: Thiadiazole, cinnamoyl chlorides, IR spectroscopy.

ACB 63

VISIBLE METHOD DEVELOPMENT AND VALIDATION OF CANAGLIFLOZIN AN ANTI-DIABETIC DRUG USING 3-METHYL-2-BENZOTHIAZOLINONE HYDRAZONE HYDROCHLORIDE (MBTH) IN BULK AND SERUM SAMPLES

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The primary objective of this study was to create and verify a spectrophotometric technique for measuring canagliflozin in bulk & serum samples using MBTH reagent at a λmax of 610 nm. A coloured product is usually formed when a chromogenic substance reacts with functional groups, causing a chemical transition. The academic community has focused a lot of emphasis on coloured detection of target items because of its excellent sensitivity and specificity. Bimolecular analysis with an easy-to-use signal readout for diagnosing diseases can be achieved by using colour modifications to chemical interactions. Sensitivity has increased as chromogenic detection has progressed from the initial qualitative detection into the present quantitative detection. The use of Liq-Liq extraction to determine Canagliflozin within human plasma has resulted in the development of a sensitive and quick bioanalysis technique.

Keywords: Canagliflozin, uv-visible spectrophotometer, 3-Methyl-2-Benzothiazolinone Hydrazone Hydrochloride

ACB 64

METHOD DEVELOPMENT AND VALIDATION OF ANTI-DIABETIC DRUG PIOGLITAZONE IN UV-VISIBLE SPECTROSCOPY USING 1, 2 NAPTHAQUINONE-4-SULPHONATE SODIUM REAGENT IN BULK, DISSO SAMPLES AND BIO-SAMPLES

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The present UV and HPLC methods are relatively simple, rapid and highly sensitive in the determination of pioglitazone hydrochloride (PIO) using 1, 2 Napthaquinone-4-sulphonate sodium. The aim of the present work was to develop and validate a simple, fast and reliable RP-HPLC and UV method for the determination of PIO in pharmaceutical dosage form. The present work deals with the development of reliable method for the estimation of pioglitazone hydrochloride using a chromogenic reagent 1, 2 Napthaquinone-4-sulphonate sodium in the UV spectroscopy. The pioglitazone hydrochloride showed absorption maxima at wavelength 455nm respectively. The linearity range for pioglitazone hydrochloride was in the range of 5-120 g/ml with correlation coefficient of 0.9996. The precision was carried out for pioglitazone hydrochloride and value was found to be less than 2. The proposed method's results were found satisfactory and are suitable for determination of pioglitazone hydrochloride for routine quality control of drug in bulk and formulation. This method is validated according to ICH guidelines Q2R1. The optimized method was developed, validated and extended to biological samples by protein precipitation extraction method.

Keywords: Pioglitazone hydrochloride, ICH guidelines, validation, method development.

ACB 65

GREEN SYNTHESIS OF SILVER NANOPARTICLES, CHARACTERIZATION AND INVITRO EVALUATION OF ANTIOXIDANT ACTIVITY OF SPIRULINA PLATENSIS

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Nanoparticles are synthesized by using various metallic compounds among which sliver nanoparticles are preferable for their formation, characterization and invitro evaluation of biological activities like invitro antioxidant activity. An environmentally safe and non-hazardous methods for synthesizing nanoparticles with plants is called "Green synthesis." The primary goal of this investigation is to prepare sliver nanoparticles with Spirulina platensis plant extract, particle size analysis, zeta potential, and characterization of sliver nanoparticles by UV- visible and FTIR spectroscopy. Sliver nanoparticles prepared have particle sizes ranging from 90 to 110 nm with zeta potential -19.4mV, the particle size and zeta potential measurements showed that the biosynthesized nanoparticles have higher stability, The UV- Visible spectrum, FTIR analysis revealed maximum absorbance of sliver nanoparticles at 257 nm and C=C stretching vibrations in alkenes & - OH stretching vibrations in phenol compounds and alcohols. The Sliver nanoparticles showed significant invitro antioxidant activity by hydrogen peroxide radical scavenging activity, sliver nanoparticles showed IC50 as 60%, compared with that of standard ascorbic acid IC50 as 48% .

Keywords: Green synthesis, Sliver nanoparticles, Spirulina platensis, FTIR .

ACB 66

DETERMINATION OF ADDED UREA IN THE MILK PRODUCTS BY SPECTROPHOTOMETER METHOD USING 1,2-NAPTHOQUINONE-4-SULPHONATE(FOLIN'S) REAGENTS AND ITS VALIDATION

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Milk naturally contains urea, which makes up a large portion of the amount of non-protein nitrogen found in the milk. The amount of urea in milk varies throughout herd members. Following that, urea and the Folin (NQS) solution mix to form a vibrant complex that is visible as an absorbed range of 454 nm. Following optimizatio

the limit of detection and quantification limitation were found to be the optimal experimental variables, at 0.00280 and 0.00848 μg/ml, respectively. The calibration plot for urea shows a straight line in a concentration that ranges from 0.1–10 μg/mL. The coefficient of the determination was R2 = 0.9999.Urea + 1,2 – Napthoquinone-4- sulphonate Reddish – orange sodium salt coloured complex

Keywords: Urea, 1,2-napthoquinone-4-sulphonate, UV Spectrophotometer

ACB 67

QUANTIFICATION OF HESPERIDIN IN BULK AND AYURVEDIC FORMULATIONS INCLUDING PLANT EXTRACTS USING CHROMOGENIC METHOD

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To develop and validate a simple and sensitive UV spectrophotometric method for Quantification of Hesperidin in bulk and Ayurveda formulation including plant extracts using chromogenic compound Gibb's reagent (2, 6-Dichloro quinone 4-Chloroimide). Chromogenic method was developed in visible region by using GIBBS Reagent. Hesperidin reacts with Gibb's reagent and 0.01N sodium hydroxide solution (Adjusted to pH 9 with dilute HCL) to produce blue colour complex. Hesperidin + Gibbs reagent Blue colour complex. The reaction between a chromogenic reagent and a drug is often specific to certain functional groups or chemical structures, allowing for selective detection and measurement. Gibb's reagent chiefly utilized for the identification and determination of phenols, unsubstitued and p-alkoxy phenols. which is measured at 500–670nm. Hesperidin is a category of bioflavonoid (Flavonoid-7-o-glycosides), is isolated from citrus fruits. It is used for blood vessel conditions such as hemorrhoids, varicose veins. Hesperidin also displays obvious benefits to the CNS by alleviating neurodegenerative diseases and disorders.For the spectrometric analysis of Hesperidin using an ELICO SL210 UV-Visible spectrophotometer with spectral treats software in accordance with International Council for Harmonization (ICH) guidelines Q2(R1), the 613.5nm wavelength absorbance was considered the primary maxima given improved reproducibility for further dilutions at that wavelength. The method was then validated using validation parameters such as linearity, range, precision, accuracy, ruggedness and robustness as stipulated in ICH guidelines. Linearity was well demonstrated for a concentration series of 2µg/ml to 40µg/ml, with a linear regression coefficient (R2) of 0.999 observed. The %RSD of the precision was observed to be in limits <2%. LOD and LOQ were found to be 0.21318μg/ml 0.64601μg/ml respectively. The Liquid-Liquid extraction method was used to design, validate, and expand the improved procedure to biological material.

Keywords: Hesperidin, Gibb's reagent, UV-Visible spectrophotometer, Ayurvedic Formulations

ACB 68

RP-HPLC METHOD DEVELOPMENT AND VALIDATION FOR SIMULTANEOUS ESTIMATION OF THIOCOLCHICOSIDE AND LORNOXICAM IN PHARMACEUTICAL DOSAGE FORM

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A new method was established for simultaneous estimation of Thiocolchicoside and Lornoxicam by RP-HPLC method. The chromatographic conditions were successfully developed for the separation of Thiocolchicoside and Lornoxicam by using Inertsil C18 column (4.6×150mm)5μ, flow rate was 1ml/min, mobile phase ratio was (70:30 v/v) ACN: phosphate buffer(KH2PO4and K2HPO4) phosphate pH3 (pH was adjusted with orthophosphoricacid),detection wavelength was 240 nm. The analytical method was validated according to ICH guidelines (ICH, Q2 (R1)). The linearity study of Thiocolchicoside and Lornoxicam was found in concentration range of 20μg-100μg and 40μg-200μg and correlation coefficient (r2) was found to be 0.999 and 0.999, % recovery was found to be 99.4% and 100.3%, %RSD for repeatability was 1.0 and 0.6, % RSD for intermediate precision was 1.6 and 0.26 respectively. The precision study was precision, robustness and repeatabilty.LOD value was 2.17 and 3.1372 and LOQ value was 7.60 and 8.132 respectively.

Keywords: Thiocolchicoside , Lornoxicam, RP-HPLC, ACN, validation.

ACB 69

SIMULTANEOUS ESTIMATION OF METFORMIN AND CANAGLIFLOZIN IN PHARMACEUTICAL DOSAGE FORM BY RP-HPLC

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A contrary stage elite execution fluid chromatographic machine has been envisioned for the fast, careful, unequivocal, and powerful support of Metformin and Canagliflozinin in each mass and prevalent pill part structures. The HYPERSIL ODS C18 (250x4.6mm ID) segment used to be utilized for chromatography, with a helpful stage including a combo of buffer and methanol in the ratio of 55:45, with a course speed of 1.0ml/min. Affirmation used to be done at 261nm. Obviously, the Metformin and Canagliflozinin help time was once 2.597 ± 0.02 minutes. LOD and LOQ were determined and was found to be 0.70, 2.11μg/ml for Canagliflozin and 1.99,6.03 μg/ml for Metformin. Because of the low run time, less than 5min it can be conveniently adopted for the routin equality control analysis of these two drugs in bulk and in combined dosage forms. The mean percentage recovery for Canagliflozin and Metformin was found to be between 100.3% and 99.3% respectively, hence the method was found to be more accurate. %RSD values for system suitability and method suitability were more precise compared to published method. 2.0% RSD. Mass and restorative medication definitions can advantage from the framework's utility in five star controls.

Keywords: HPLC, Simultaneous estimation, Metformin, Canagliflozinin

ACB 70

SPECTROPHOTOMETRIC METHOD FOR QUANTIFICATION OF DABIGATRAN USING 1-NAPTHOL BY UV-VISIBLE SPECTROSCOPY IN BULK & SAMPLES

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A simple and sensitive spectrophotometric method in visible region has been developed and validated for quantification of dabigatran etexilate mesylate (DAB) in their bulk and pharmaceutical dosage forms with 1-Napthol reagent which gives coloured complex.DAB reacts with 1-napthol in the presence of sodium nitrite and HCl with ammonium sulphamate, to form green coloured complex which is measured at 449nm.Beer's law is obeyed in concentration range of 8-62 μg/mL for DAB respectively with correlation coefficient of 0.999. Limit of detection and quantification were 0.120μg/mL and 0.366 μg/mL for DAB. The recovery of accuracy was found to be 100.0%. When marketed formulations were analyzed, the results obtained were in good agreement with labelled amounts. The developed method was validated statistically as per ICH guidelines. The protein precipitation extraction method was designed, validated, and expanded for the biological material.

Keywords: UV-Visible spectrophotometer, Dabigatran Etexilate Mesylate (DAB), 1-Napthol.

ACB 71

UV –VISIBLE SPECTROPHOTOMETRY METHOD FOR THE QUANTITATIVE ANALYSIS OF BENFOTIAMINE USING BRATTON-MARSHALL REAGENT IN BULK AND SERUM SAMPLES

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Benfotiamine is soluble in the organic solvent DMSO, slightly soluble in methanol and practically insoluble in ethanol and chloroform used estimation of chloramphenicol, sulphamethoxazole, dapsone, folic acid. The present study is aimed at developing and validating a simple and rapid spectrophotometric method for its determination.

The mechanism of the proposed method between benfotiamine and BM reagent in the presence of primary aromatic amino group is first diazotised with sodium nitrite and hydrochloric acid resulting in the formation of pink coloured solution with a maximum absorption peak at 550 nm. Benfotiamine has a linearity range of 10-500µg/ml and a correlation coefficient of 0.9997. When benfotiamine was measured precisely, the result was less than 2. The ICH guidelines Q2R1 are followed in the validation of this approach. The protein precipitation extraction method was used to design, validate, and expand the improved procedure to biological material.

Benfotiamine + BM Reagent + ammonium sulfamate + Sodium nitrate + HCL → Pink Coloured Complex.

Keywords: UV-spectrophotometer, benfotiamine, N-(1-naphthyl) ethylene diamine

ACB 72

DISCOVERY OF PIM-1 KINASE INHIBITORS: SYNTHESIS, BIOLOGICAL EVALUATION, INSILICO STUDIES OF NOVEL OXINDOLE WITH DITHIOCARBAMATE

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Proviral integration site for moloney murine leukemia virus-1 an enzyme encoded by a gene PIM-1 for serine threonine kinase and regulates various signaling pathways, any deregulation in PIM-1 pathway is implicated with development of cancers and acts as a biomarker. Because of its oncogenic signaling it is widely studied in cancer research. Many PIM-1 kinase inhibitors were reported and some have failed at phase 1 & 2 clinical trials owing to their serious toxicities. Thus we anticipated to enhance the PIM-1 Kinase inhibitory potential by isosterically replacing the indole moiety of brassinin with 2-oxindole. In current study we synthesized a series of novel 2-oxoindol with dithiocarbamate derivatives, and evaluated for their anti-cancer activity using MTT assay method against SKOV3 (ovarian cancer) cell line and PIM-1 kinase assay using ADP-Glo kinase assay method. Also quantitative estimate of drug-likeness and molecular docking studies were performed to find the binding affinity with PIM-1 kinase in order to rationalize their anticancer activity. From the series, compounds 6d, 6a and 6e exhibited the highest PIM-1 kinase activity with a IC50 value of 0.98 μM, 1.04 μM & 1.43 μM respectively and can be encouraging leads as PIM-1 Kinase inhibitors.

Keywords: PIM-1 Kinase, Oxindole, Dithiocarbamate, SKOV3, Ovarian cancer, Molecular Docking.

ACB 73

DESIGN, INSILICO STUDIES AND SYNTHESIS OF DITHIOCARBAMATE SUBSTITUTED ISATIN DERIVATIVES AS ANTICANCER AGENTS TARGETING PIM1 KINASE

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The discovering of novel anticancer drugs is still in trend in order to find the targeted, efficient and safer drugs, though researchers have made many milestones in cancer research. The current study involves the design, synthesis of series of dithiocarbamate substituted isatin derivatives against PIM-1 kinase enzyme, an oncogene involved in various types of cancers. The designed derivatives were subjected to a quantitative estimation of drug-like properties based on which the molecules were screened for molecular docking studies to find the binding affinity with the enzyme PIM-1 Kinase in order to rationalize their anticancer activity against SKVO3 cell lines. The compound 4d proved to be the best anticancer drug candidate with IC50 values of 9.23 μM when compared to standard drug doxorubicin with IC50 values of 9.70 μM, also the compounds with good cytotoxic action were subjected to PIM-1 kinase assay activity. From PIM-1 assay results, it is clear that compound 4d, exhibited the highest PIM-1 kinase enzyme activity with an IC50 value of 1.12 μM, and can be the promising lead as a PIM-1 kinase inhibitor.

Keywords: Isatin, Dithiocarbamate, Insilico studies, Molecular Docking, MTT assay (SKVO3), PIM-1 kinase assay

ACB 74

A REVIEW ON NITROSAMINES ANALYSIS AND ITS SIDE EFFECTS

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Nitrosamines, or more correctly N-nitrosamine impurities refers to any molecular containing nitroso functional groups, which may increase the risk of cancer, have been found in some types of medications. This resulted in drug recalls, warning letters and drug shortages. Nitrosamine impurity analysis requires robust and sensitive analytical methods to ensure confidence in the obtained results. The wide Thermo Scientific portfolio is proven to be excellent for nitrosamine analysis, ensuring your exploratory and routine methods are performed as accurately and reliably as possible while maintaining requirements from regulatory bodies worldwide. Major products for the analysis of nitrosamines include: Liquid, gas, and ion chromatography for robust separation, High resolution, accurate mass (HRAM) mass spectrometry for ultimate confidence avoiding false positive results, Tandem mass spectrometry, the best tool in routine analysis, Single, compliance-ready software solution for all technology solutions.

Keywords: Nitrosamine analysis, Functional groups, Thermo Scientific portfolio, Sensitive

ACB 75

CHROMOGENIC METHOD DEVELOPMENT & VALIDATION OF TAPENTADOL IN BULK, DISSO-SAMPLES & BIO- SAMPLE USING GIBBS REAGENT BY UV- VISIBLE SPECTROSCOPY

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Tapentadol Hydrochloride, an opioid analgesic, is widely used for the management of moderate to severe pain. Tapentadol is a novel, centrally acting analgesic with dual mechanism of action, combining mu-opioid receptor agonism with noradrenaline reuptake inhibition in the same molecule.A simple and sensitive UV-visible spectroscopic method for the assay of Tapentadol in pure and pharmaceutical formulations based on the reaction between phenolic group in the Tapentadol drug with 2,6-Dichloroquinone-4-chloroimide (Gibbs) reagent gives coloured complex. Tapentadol Hydrochloride + Gibbs Reagent → Bluish colour complex The Goal of the current work is to establish a trustworthy method for Tapentadol determination utilizing UV spectroscopy. The wavelength at which the Tapentadol exhibited absorption maxima was 653nm. Tapentadol has a linearity range of 20-140µg/ml and a correlation coefficient of 0.9999. . Limit of detection and quantification were 0. 0.4009μg/mL and 1.215μg/mL. The recovery of accuracy was found to be 100.0%. When marketed formulations were analyzed, the results obtained were in good agreement with labelled amounts. The developed method was validated statistically as per ICH guidelines. The protein precipitation extraction method was designed, validated, and expanded for the biological material.

Keywords: UVspectroscopy, 2,6-Dichloroquinone-4-chloroimide, Tapentadol Hydrochloride

ACB 76

EVALUATION OF THE EFFICACY OF PRESERVATIVE SYSTEM IN TOPICAL PREPARATIONS

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Currently, microbial contamination is one of the major problems faced by the pharmaceutical industry to maintain quality of preparations intact during shelf life and during usage in multidose containers. The objective of present study was to evaluate the efficacy of different preservatives in topical preparations and to propose an efficient preservative system. Different concentrations of preservatives were estimated for antimicrobial activity against different microorganisms. The gel and cream bases were prepared with different concentrations of preservatives (methyl paraben, propyl paraben and combination) and the challenge test was performed by artificially contaminating with separate inoculums of Staphylococcus aureus, Pseudomonas aeruginosa, Escherichia coli and Candida albicans. The number of colony forming units were determined by plate count method on 7, 14, 28 days. The medium concentration of preservative (methyl paraben) has proved to be more effective and has shown its significant effect ($P \leq 0.05$) against the studied species than with low concentration of combination (methyl paraben and propyl paraben) preservatives in topical preparations. Overall results of the test has proved 0.15% of methyl paraben in creams and gels as effective concentration of the preservative system that can be used as formulation excipients.

Keywords: Preservatives, microbial contamination, challenge test, antimicrobial activity.

ACB 77

RP - HPLC ANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR THE SIMULTANEOUS ESTIMATION OF MEMANTINE AND DONEPEZIL IN BULK AND TABLET DOSAGE FORM

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A simple, Accurate, precise method was developed for the simultaneous estimation of the Donepezil and Memantine in Tablet dosage form. Chromatogram was run through ThermoScientificC18 (150mm 4.6mm, 5). Mobile phase containing Sodium phosphate Buffer and Acetonitrile and in the ratio of 50:50 was pumped through the column at a flow rate of 1.0 ml/min. Temperature was maintained at 30°C. Optimized wavelength for Donepezil and Memantine was 247nm. Retention time of Donepezil and Memantine were found to be 3.048 min and 2.283 min. %RSD of the Donepezil and Memantine were found to be 0.3 and 0.4 respectively. %Recover was Obtained as 100.10% and 100.28% for Donepezil and Memantine. LOD, LOQ values obtained from regression equations of Donepezil and Memantine were 0.13ppm, 0.18ppm and 0.39ppm, 0.55ppm respectively. Regression equation of Donepezil is y = 50450x + 5606, and of Memantine is y = 50708x + 4342.5, Retention times are decreased and that run time was decreased so the method developed was simple and economical that can be adopted in regular Quality control test in

Industries.

Keywords: Donepezil, Memantine, RP-HPLC

ACB 78

RP -HPLC ANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR THE SIMULTANEOUS ESTIMATION OF OLANZAPINE AND SAMIDORPHAN IN BULK AND TABLET DOSAGE FORM

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A simple, Accurate, precise method was developed for the simultaneous estimation of the Samidorphan and Olanzapine in bulk and pharmaceutical dosage form. Chromatogram was run through Ascentis® Express C18 150 x 4.6 mm, 2.7µm. Mobile phase containing Buffer 0.01N Potassium dihydrogen phosphate: Acetonitrile taken in the ratio 65:35 %v/v was pumped through column at a flow rate of 1.0 ml/min. Buffer used in this method was 0.01N Kh2po4 buffer. Temperature was maintained at 29°C. Optimized wavelength selected was 226.0 nm. Retention time of Olanzapine and Samidorphan were found to be 2.214 min and 3.207 min. %RSD of the Olanzapine and Samidorphan ere and found to be 0.4% and 0.6% respectively. %Recovery was obtained as 100.29% and 100.02% for olanzapine and Samidorphan respectively. LOD, LOQ values obtained from regression equations of Olanzapine and Samidorphan were 0.07, 0.21 and 0.15, 0.45 respectively. %Assay was obtained as 99.71% and 99.58% for Olanzapine and Samidorphan respectively. Regression equation of Olanzapine is y = 21794x + 1593, y = 20997x + 3470. of Samidorphan. Retention times were decreased and that run time was decreased, so the method developed was simple and economical that can be adopted in regular Quality control test in Industries.

Key Words: Samidorphan, Olanzapine, RP-HPLC, Method Development.

ACB 79

A NOVEL STABILITY INDICATING RP-UPLC METHOD FOR SIMULTANEOUS ESTIMATION OF TELMISARTAN AND AZELNIDIPINE IN BULK AND THEIR COMBINED FILM COATED BILAYER TABLET DOSAGE FORM

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An efficient, perceptive, sensitive, accurate and economical RP-UPLC method with tunable UV detector has been developed for the simultaneous estimation of telmisartan and azelnidipine in bulk powders and their combined film-coated bilayer tablet dosage form. The proposed method employs Agilent Zorbax Stable Bond (SB) packing C8 (100 mm × 2.1 mm, 2 µm) column, a mobile phase consisting of 0.01 N potassium dihydrogen orthophosphate (pH 4.8) and acetonitrile in 70:30 v/v ratio pumped at a flow rate of 0.3 mL/min, and the UV detector tuned to 257 nm wavelength, which reliably separates all analytes with good resolution. Telmisartan and azelnidipine were eluted from the column at 0.675 and 1.601 min, respectively. Linearity of the telmisartan and azelnidipine determination was observed in the range of 20 – 120 µg/mL and 2 – 12 µg/mL, respectively. Computed values of the validation parameters confidently show that the method is specific, accurate and precise with high sensitivity. Exploration of the analytes under various forced degradation conditions with the help of the proposed method confirms stability-indicating character of the method. The developed method has high efficiency in separating telmisartan and azelnidipine and ensures their stability-indicating assay with good sensitivity and specificity, thus being adapted to the pharmaceutical industry applications.

Keywords: Azelnidipine, Telmisartan, RP-UPLC, Stability-indicating, Method validation.

ACB 80

EMPOLYING VIRTUAL REALITY TECHNOLOGY FOR THE TREATMENT OF PSYCHIATRIC CONDITIONS

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Virtual reality, or VR, allows users to experience a sense of presence in a computer-generated three-dimensional environment. Sensory information is delivered through a head mounted display and specialized interface devices. These devices track head movements so that the movements and images change in a natural way with head motion, allowing for a sense of immersion. VR allows for controlled delivery of sensory stimulation via the therapist and is a convenient and cost-effective treatment. The primary focus of this article is to review the available literature regarding the effectiveness of incorporating VR within the psychiatric treatment of a wide range of psychiatric disorders, with a specific focus on exposure-based intervention for anxiety disorders. A systematic literature search was conducted in order to identify studies implementing VR based treatment for anxiety or other psychiatric disorders. This review will provide an overview of the history of the development of VR based technology and its use within psychiatric treatment, an overview of the empirical evidence for VR based treatment, the benefits for using VR for psychiatric research and treatment, recommendations for how to incorporate VR into psychiatric care, and future directions for VR based treatment and clinical research.

Keywords: Technology, virtual reality, anxiety disorders, psychiatric disorders.

ACB 81

METHOD DEVELOPMENT AND VALIDATION OF ANTIDIABETIC DRUG SITAGLIPTIN BY UV-VISIBLE SPECTROSCOPY USING 1,2-NAPTHOQUINONE-4-SULPHONATE(NQS) REAGENT IN BULK AND DISSOLUTION SAMPLES AND BIOIOGICAL SAMPLES

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A simple and sensitive UV-visible spectroscopic method for the assay of Sitagliptin in pure and pharmaceutical formulations based on the reaction between amino group in the Sitagliptin drug with 1,2-Naphthoquinone-4-sulfonate (NQS) reagent gives coloured complex Sitagliptin + NQS Reagent → Orange coloured ComplexThe goal of the current work is to establish a trustworthy method for sitagliptin determination utilizing UV spectroscopy. The wavelength at which the sitagliptin exhibited absorption maxima was 454 nm. Sitagliptin has a linearity range of 5-120ug/ml and a correlation coefficient of 0.9975. When sitagliptin was measured precisely, the result was less than 2. The results of the suggested approach were deemed adequate and appropriate for determining sitagliptin for regular quality control of the drug's formulation and bulk supply. The ICH guidelines Q2R1 are followed in the validation of this approach. The protein precipitation extraction method was used to design, validate, and expand the improved procedure to biological material.

Keywords: NQS Reagent, Sitagliptin, UV visible spectrophotometer.

ACB 82

METHOD DEVELOPMENT AND VALIDATION FOR QUANTIFICATION OF NEEM IN MARKETED CREAMS BY UV-VISIBLE SPECTROPHOTOMETRY AFTER EXTRACTION

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To develop and validate a reliable UV-Visible spectrophotometric method for the quantification of Azadirachta indica (Neem) extract in marketed cream formulations following an optimized extraction procedure. A simple and efficient extraction protocol was optimized to isolate Azadirachta indica from cream formulations. The extraction involved dissolving the cream in a mixture of ethanol and water, followed by sonication and centrifugation to obtain a clear supernatant. The extracted Azadirachta indica was then quantified using a UV-Visible spectrophotometer at a wavelength of 235 m, corresponding to the characteristic absorbance peak of the bioactive compounds. The method development focused on optimizing parameters such as solvent composition, extraction time, and spectrophotometric conditions to ensure maximum sensitivity and specificity. The developed method was validated according to ICH guidelines, assessing parameters including linearity, accuracy, precision, specificity, limit of detection (LOD), and limit of quantification (LOQ). Linearity was established in the concentration range of 5-50 μg/mL with a correlation coefficient (r2) of 0.999. The method demonstrated high accuracy, with recovery rates between 98-102%, and precision, with intra- and inter-day relative standard deviations (RSD) below 2%. The LOD and LOQ were determined to be too low. The developed UV-visible spectrophotometric method proved to be a robust and reliable technique for the quantification of Azadirachta indica in marketed creams. The method's validation confirmed its suitability for routine quality control and analysis of herbal components in cosmetic formulations. This approach offers a cost-effective and straightforward solution for ensuring the consistency and efficacy of Neem-based products.

Keywords: UV-Visible Spectrophotometer, Validation, Neem cream, Extraction.

ACB 83

RP - HPLC ANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR THE SIMULTANEOUS ESTIMATION OF TEZACAFTOR, IVACAFTOR AND ELEXACAFTOR IN BULK AND PHARMACEUTICAL DOSAGE FORM

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An uncomplicated, particular, and reliable technique was adopted to concurrently determine the quantities of Ivacaftor, Elexacaftor, and Tezacaftor in API and pharmaceutical dosage form. The Column used was the Discovery 150 x 4.6 mm, 5m. The mobile phase, composed of a solution of Ortho Phosphoric Acid (0.1%), Acetonitrile and methanol in a ratio of 55:35:10, was injected at a flow rate of 0.9 ml/min. The heat was regulated at 28°C and the detector wavelength is 278.0 nm. Retention time values are found to be 2.537, 2.089, and 3.090 respectively. The %RSD values for systemic stability were found to be 0.6, 0.4, and 0.3. The comparative average difference of the method precision for Tezacaftor, Elexacaftor, and Ivacaftor was determined to be 0.4. Recovery percentages were found to be 99.79% for Ivacaftor, 99.72% for Elexacaftor, and 100.05% for Tezacaftor. Additionally, the Limit of Detection (LOD) and Limit of Quantification (LOQ) values, calculated were 0.06 ppm and 0.22 ppm for Ivacaftor, 0.18 ppm and 0.19 ppm for Elexacaftor, and 0.07 ppm and 0.57 ppm for Tezacaftor, respectively. The regression equations for Tezacaftor, Ivacaftor, and Elexacaftor were as follows: y = 21548x + 869.63, y = 22674x + 2799.3, and y = 21285x + 4513.2. This method was characterized by reduced retention times and it offers a simple and Cost-effective solution.

Keywords: Tezacaftor, Ivacaftor, Elexacaftor, RP-HPLC

ACB 84

SYNTHESIS AND ANTIOXIDANT ACTIVITY OF PYRIDINE FUSED THIADIAZOLE DERIVATIVES

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Thiadiazoles are five membered heterocyclic structures containing two nitrogens and one sulphur atom. These are synthesised by reacting thiosemicarbazide and substituted benzoic acids. The synthesised thiadiazoles are then condensed with 1,4- dihydropyridines at ester group to form amide linkage. A total of 5 compounds are synthesised and these are evaluated for antioxidant activity.

Keywords: Thiadiazoles, dihydropyridines, amide, antioxidant.

ACB 85

ESTIMATION OF SYNTHETIC DYES IN VARIOUS FOOD SAMPLES BY UV – SPECTROSCOPIC METHODS

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A reliable and fast method was developed and applied to the estimation of selected synthetic food dyes (Carmosine, Ponceau 4R, Sunset Yellow) in three different kinds of food stuff Maggie masala , mixed fruit jam and Tomato ketchup, Gems. Synthetic food colors like Ponceau 4R, Carmosine Sunset Yellow and three sample were detected at wavelengths 482nm,510nm,425nm. All the samples were studied as per USFDA.

Keywords: synthetic food dyes, ponceau 4R, Carmoaine sunset yellow, uv spectroscopy, wavelength 482nm, 510nm, 425 nm.

ACB 86

QUALITY ASSESSMENT OF VARIOUS DRINKING WATER SAMPLES

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Quality Assessment of Various Drinking Water Samples" highlights the critical importance of clean water for human health and dignity. The study evaluates the physico-chemical quality of water purifiers by analyzing parameters like pH, acidity, alkalinity, chloride content, total dissolved solids (TDS), and calcium levels in different water samples. It emphasizes the impact of water quality on public health and the necessity of providing safe drinking water to prevent health hazards. The research results indicate which water samples meet quality standards and which exceed permissible limits, offering insights for improving access to clean and safe drinking water globally to ensure the well-being of communities.

Keywords: Water quality,Physico-chemical analysis, Drinking water samples, pH, Acidity, Alkalinity, Chloride content, Total dissolved solids (TDS).

ACB 87

THU2,3-DIMETHYLBENZOCYCLOHEPTENONE TETHERED THIADIAZOLO-PYRIMIDINE CARBOXYLATES AS POTENTIAL ANTI-PROLIFERATIVE AGENTS-II

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Benzosuberone nucleus containing natural products represents the medicinal and pharmaceutically important class of compounds because of their diverse range of biological activities. In former years, benzosuberone nucleus embedded with numerous natural products has been isolated. Benzosuberone unit has a core structure of natural products such as Colchicine, Theaflavin, Bussealin E, Demethylsalvicanol, Brussonol and Feveline

which were clinically proven as anticancer agents.1 In the view of L. Nagarapu's research group interest towards biologically active molecules2-11 an efficient and eco-friendly method has been developed for the synthesis of 2,3-dimethylbenzocycloheptenone tethered thiadiazolo-pyrimidine carboxylates via a multicomponent condensation reaction of chloro-benzocycloheptenyl thiadiazol-2-amines with various structurally divergent aromatic aldehydes and ethylacetoacetate in the presence of MCM-41(H) and newly synthesized derivatives were evaluated for their anti-proliferative activity against four human different cancer cell lines. Moreover, efforts are also in progress to improve the antitumor activities of these potential leads.

Keywords: Benzosuberone, Thiadiazol-amine, antiproliferative activity.

ACB 88

DESIGN AND SYNTHESIS OF SOME NOVEL 2-AZETEDINONE DERIVATIVES AS POTENTIAL ANTI-PROLIFERTIVE AGENTS

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A new series of new anti-proliferative agents 4-(3-chloro-2-(Substituted-phenyl)-4-oxoazetidin-1-yl)-N-(5-methylisoxazol-3-yl)benzenesulfonamide derivatives (6a-o) were designed based on the structure and synthesized characterized by spectral data and evaluated for anti-cancer properties against breast cancer, MCF-7, HeLa and MDA-MB-231. These β-lactamderivatives depicted significant cytotoxicity in cancer cell lines but not in normal humanmammary epithelial cells, MEpiC. Interestingly, derivatives of 4-(3,4 Di bromo)-phenyl-2-oxo-azetidin rendered the compound 6f relatively most potent anti-proliferative activity with IC50 values of 1.02 ± 0.03 and 1.26 ± 0.03 μM, 6.86 ± 0.009 μM and 1.36 ± 0.03 against MCF-7, HeLa, MDA-MB-231 cancer cell lines, when compared to standard drug cisplatinwith IC50 values of 0.91 ± 0.03, 0.84 ± 0.02 and 0.67 ± 0.02against MCF-7, HeLa, MDA-MB-231 cancer cell lines. Compound 6l, 6m, 6n showed less potent anti- proliferative activity when compared to aromatic aldehydes (6b, 6c, 6d, 6e) substituted on phenyl-2-oxo-azetidine against MCF-7, HeLa, MDA-MB-231 cancer cell lines. Further, Docking studies of all the molecules disclosed close hydrogen bond interactions within the binding site.

Keywords: 2-Azetidinones; anti-proliferative effect; apoptosis; Molecular docking.

ACB 89

COMPARITIVE STUDY OF MULTI MEDIA DISSOLUTION PROFILING OF TWO LEADING BRANDS OF METFORMIN HYDROCHLORIDE TABLETS

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This study investigates the dissolution profiles of two leading brands of Metformin's Hydrochloride 500 mg tablets, Glycomet and Okamet, using a multi- media approach to compare their in-vitro drug release characteristics under different conditions. Metformin is widely used for managing type 2 diabetes mellitus, and understanding the dissolution profiles of these formulations is crucial for ensuring consistent therapeutic efficacy. Dissolution tests were conducted using the USP Type II (paddle) apparatus in three dissolution media: 0.1N HCl (pH 1.2), pH 4.5 acetate buffer, and pH 6.8 phosphate buffer at 37 ± 0.5°C. Drug release was monitored at 10-minute intervals over a 60-minute period, with samples collected at 10, 20, 30, 40, 50, and 60 minutes. The percentage of drug released was determined using UV spectrophotometry at a wavelength of 233 nm. The results demonstrated significant variations in the dissolution profiles between the two brands. Glycomet generally exhibited higher drug release rates across all media compared to Okamet, which showed a more gradual and consistent release. These findings suggest differences in formulation and excipient composition between the two brands, impacting their dissolution behavior. This comparative analysis provides essential insights into the in-vitro drug release behavior of these two formulations, which can aid in predicting their in-vivo performance. The study highlights the importance of multi-media dissolution profiling in assessing the bioequivalence and therapeutic efficacy of different pharmaceutical formulations of Metformin Hydrochloride. and therapeutic efficacy of different pharmaceutical formulations of Metformin Hydrochloride.

Keywords: Metformin Hydrochloride, Glycomet and Okamet, type 2 diabetes mellitus, USP Type II (paddle) apparatus.

LIST OF ABSTRACTS SELECTED FOR ORAL PRESENTATIONS IN ACB

S.NO	CODE	NAME OF CANDIDATES	COLLEGE NAME	TOPIC
1	ACB 14	Dr. Pani Kumar D Anumolu, G. Madhuri*, G. Mamatha, Suraj Kumar	Gokaraju Rangaraju College Of Pharmacy, Bachupally, Hyderabad	Stability Indicating Hplc Method For Simultaneous Estimation Of Meropenem And Vaborbactum In Bulk And Tablet Dosage Form
2	ACB 24	Chandra Sekhara Rao Boddala, Thirupathi Choppari, Lakshmi Narayana Chennuru, Avlnsh Hariharan[2], M. V. N. Kumar Talluri*	[1]Daicel Chiral Technologies (India) Pvt Ltd, IKP Knowledge Park, Hyderabad [2] Gitam University, Visakhapatnam,AP, India.	Enantioselective Separation Of Imeglimin Hydrochloride-A New Oral Antidiabetic Drug On Novel Immobilized Chiralpak Ik-Csp Using High-Performance Supercritical Fluid And Liquid Chromatography
3	ACB 40	Mamillapalli.Vani, Mvd Pravallika, Vinitha Rani Kalapala, Kantamaneni. Padmalatha.	Vijaya Institute Of Pharmaceutical Sciences For Women Enikepadu -Vijayawada, NTR District, Andhra Pradesh	Analytical Method Development And Validation For Estimation Of B-Sitosterol In Acid Mukti Tablets, An Ayurvedic Formulation By Using RP-HPLC
4	ACB 5	S. Muni Sireesha* [1,2] , Beda Durga Prasad [1]	[1]Gitam School Of Pharmacy, Gitam University, Hyderabd, India. [2]Sarojini Naidu Vanita Pharmacy Maha Vidyalaya, Tarnaka, Hyderabad, India.	Pharmacophore Based Virtual Screening, Molecular Docking, Synthesis And Antimicrobial Activity Of Quinoxaline Amide Derivatives
5	ACB 26	Danaboina Srikanth[1], Kollu Shanthi[1], Swanand Vinayak Joshi[1], Y.V. Madhavi1, Sidharth Chopra[2], Srinivas Nanduri[1],*	[1]Department Of Chemical Sciences, National Institute Of Pharmaceutical Education And Research (NIPER), Hyderabad, Telangana, India [2]Division Of Microbiology, CSIR-Central Drug Research Institute, Sitapur Road, Sector 10, Janakipuram Extension, Lucknow, Uttar Pradesh, India	Synthesis And Anti-Bacterial Evaluation Of New Pyrazoline Derivatives Against Drug Resistant Staphylococcus Aureus

S.NO	CODE	NAME OF CANDIDATES	COLLEGE NAME	TOPIC
6	ACB 34	Mallick Maidul Islam*, V. Alagarsamy, M.T. Sulthana, Bandi Narendhar	Medicinal Chemistry Research Laboratory, MNR College Of Pharmacy, Sangareddy, Gr. Hyderabad, Telangana	Computational Screening Of Some Phytochemicals To Identify Best Modulators For Ligand Binding Domain Of Estrogen Receptor Alpha
7	ACB 65	Dr. M. Prathibha Bharathi	Gokaraju Rangaraju College Of Pharmacy, Bachupally, Hyderabad	Green Synthesis Of Silver Nanoparticles Characterization And Invitro Evaluation Of Anti Oxidant Activeity Of Spirulina Platensis

PPC

Pharmacology / Pharmacy Practice

PPC 1

ASSESSING THE EFFICACY OF HERBAL EXTRACTS IN DIABETES-INDUCED WOUND HEALING

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Diabetes, a metabolic disorder, arises from insufficient insulin production or sensitivity, leading to lifelong hyperglycaemia necessitating various medications, including lifelong insulin therapy. It engenders numerous complications spanning cardiovascular, neuropathic, nephropathic, retinopathic, and dermatologic domains. Among these, impaired wound healing stands out as a common challenge for diabetic individuals. Delayed healing often stems from compromised blood circulation, increasing infection risks. Elevated blood sugar levels exacerbate the issue by impeding immune cell function, escalating inflammation, and disrupting the production of crucial growth factors and collagen essential for tissue repair. Addressing these multifaceted factors is vital for effective management and treatment strategies tailored to mitigate the complexities of diabetic wound healing. Diabetes-induced wound healing poses significant challenges due to impaired immune function and reduced tissue repair processes. Synthetic medications, while effective, often come with adverse effects that hinder natural healing. Herbal extracts, particularly a combination of Moringa oleifera and Raphanus sativus, offer a promising alternative. In this study, the herbal constituents were extracted using a Soxhlet apparatus and subjected to phytochemical screening. Diabetes was induced in rats using a combination of streptozotocin and nicotinamide. Oral administration of the herbal extracts at a dose of 200 mg/kg was then initiated. Wounds were created using an excision method, and the healing process was observed for 14 days, comparing the herbal treatment with the standard medication, metformin. Results from this study may shed light on the potential efficacy of herbal extracts in improving wound healing in diabetic conditions, offering a safer and more natural approach compared to synthetic medications. This research could pave the way for the development of herbal-based therapies to address the complex challenges of diabetic wound management.

Keywords: Diabetes, wound healing, herbal extracts, excision method

PPC 2

EVALUATION OF THE SAFETY PROFILE AND CLINICAL OUTCOMES OF DESIDUSTAT IN CHRONIC KIDNEY DISEASE PATIENTS WITH ANEMIA: A PROSPECTIVE OBSERVATIONAL STUDY

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Anemia is a common complication of chronic kidney disease (CKD) resulting from reduced erythropoietin production and impaired iron metabolism. The global estimated prevalence of CKD is 13.4%the prevalence increases with the CKD stage, with an overall prevalence of 22.4%, 41.3%, and 53.9% in CKD stages 3, 4, and 5, respectively Desidustat , a novel oral hypoxia-inducible factor prolyl hydroxylase inhibitor, has emerged as a promising agent for the management of anemia in CKD. This case study presents the clinical management of a patient with CKD and anemia using Desidustat. A 60-year-old male with stage 3 CKD secondary to diabetic nephropathy presented with fatigue, weakness, and exertional dyspnea. Laboratory investigations revealed hemoglobin levels of 10 g/dL, indicative of moderate anemia. Serum creatinine was 2.5 mg/dL, and estimated glomerular filtration rate (eGFR) was 35 mL/min/1.73m². Iron studies showed decreased ferritin levels and transferrin saturation, suggestive of iron deficiency anemia. The case demonstrates the efficacy of Desidustat in managing anemia associated with CKD. By targeting hypoxia-inducible factors and improving endogenous erythropoietin production, Desidustat offers a novel approach to treating anemia while addressing underlying iron deficiency. Regular monitoring of hemoglobin, renal function, and iron parameters is crucial for optimizing treatment outcomes and ensuring patient safety.

Keywords: Anemia , Chronic Kidney Disease , Desidustat , Estimated glomerular Filtration(eGFR) , Hemoglobin(Hb) , Serum Creatinine.

PPC 3

EVALUATION OF CLINICAL, BIOCHEMICAL AND IMAGING OUTCOMES OF VITAMIN E IN THE MANAGEMENT OF NON-ALCOHOLIC FATTY LIVER DISEASE: A CASE STUDY

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Non-alcoholic fatty liver disease (NAFLD) is a common liver disorder characterized by the accumulation of fat in the liver in the absence of significant alcohol consumption. The estimated global incidence of NAFLD is 47 cases per 1000 population and is higher among males than females. In India, the overall prevalence of NAFLD in the general population is close to 40 percent. Vitamin E has been investigated as a potential treatment for NAFLD due to its antioxidant properties and its ability to reduce oxidative stress and inflammation in the liver. A 45-year-old male presented with complaints of fatigue and mild discomfort in the upper right abdomen, elevated liver enzymes (ALT): 90 U/L, (AST): 80 U/L. A liver biopsy confirmed the diagnosis, revealing macrovesicular steatosis of 30% with mild inflammation. He had a history of obesity, and a diet high in processed foods and sugar. He was prescribed vitamin E supplementation (800 IU/day) based on evidence suggesting its efficacy in improving liver enzymes and histology in NAFLD. After 6 months of lifestyle modifications and vitamin E supplementation, the patient's liver enzymes significantly improved, with a decrease in ALT and AST levels within the normal range. Follow-up imaging studies showed a reduction in hepatic steatosis, indicating improvement in liver health. Vitamin E, a fat-soluble vitamin, which reduces liver inflammation, Antioxidant, anti-inflammatory, and anti – apoptotic properties of vitamin E accompanied by ease-of-use and exceptional tolerability have made vitamin E a pragmatic therapeutic choice in NAFLD.

Keywords: NAFLD, Vitamin E, Alanine Aminotransferase (ALT), Aspartate Aminotransferase (AST), Dietary modifications, Oxidative stress.

PPC 4

A PROSPECTIVE OBSERVATIONAL STUDY ON POLYPHARMACY LEAD TO INAPPROPRIATE MEDICATION IN MULTIPLE OUTPATIENT DEPARTMENTS USING STOPP/START CRITERIA

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Polypharmacy presents a critical concern among geriatric patients, intricately linked to potentially inappropriate medication usage, notably within outpatient care contexts. The over- prescription of medications exacerbates existing health conditions and places significant financial strain on elderly individuals, particularly those with limited education and living below the poverty line. This underscores the urgent need for intervention and improved healthcare practices tailored to this vulnerable demographic. Addressing polypharmacy and promoting medication appropriateness is imperative to mitigate health risks and alleviate financial burdens, ensuring better outcomes and quality of life for older adults in our communities. This prospective observational study, conducted over six months across various specialty hospitals in Warangal district, Telangana, India, encompassed 310 patients aged over 65 years discharged between February and July 2023. Employing START/STOPP criteria, medication appropriateness was evaluated, defining polypharmacy as the use of more than five drugs daily and hyper-polypharmacy as exceeding ten drugs. Statistical analysis, including ONE-WAY ANOVA, was employed to assess significance. Results revealed a clear correlation between polypharmacy and potentially inappropriate medication usage, with 134 males and 52 females experiencing polypharmacy, leading to 39 and 16 instances of potentially inappropriate medication, respectively. Moreover, hyper-polypharmacy affected 40 males and 38 females, resulting in 21 and 15 cases of potentially inappropriate medication. In conclusion, the prevalent practices of polypharmacy and hyper-polypharmacy underscore the urgent need to address potentially inappropriate medication prescribing, given its substantial healthcare and financial ramifications for geriatric patients.

Keywords: STOPP/START Criteria, Polypharmacy, Potentially inappropriate medications

PPC 5

ARTIFICIAL INTELLIGENCE IN CLINICAL TRIALS AND DISEASE PREDICTION

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Envision dedicating fifteen years to critical interest and emptying staggering amount of funds into it, at the same time confronting a disappointment rate of 95 per cent. Today's medication goes to the business sector after an extensive and very costly process of drug development. It takes anywhere in the range of 10 to 15 years. That is just a lot to spend and excessively years for the patients to hold up. Artificial intelligence [AI] can significantly reduce the time induced and also cut the expenses by more than half. With the present techniques, for each 100 medication that achieve first stage clinical trials, only ones go ahead to wind up a genuine treatment. The

potential for AI to transform the field of medicine and the way patients are cared for is enormous. AI's capacity to sift through mountains of data, spot trends, and make precise predictions has the potential to hasten the development of new treatments as well as improve trial design, patient recruitment and selection, safety monitoring, and drug discovery. AI has the potential to bring us closer to personalized medicine and more effective therapies by simplifying procedures, decreasing costs, and enhancing efficiency. We are taking the first steps on a revolutionary path towards a future where scientific progress is expedited, patient outcomes are better, and medical discoveries are available to everybody as we continue to explore the tremendous potential of AI in clinical trials.

Keywords: Artificial intelligence, Techniques Medication, Drug Development, Clinical trials, Disease Prediction

PPC 6

STEMCELL THERAPY IN TYPE 1 DIABETES

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MSCs have been used in human clinical trials, showing that stem cell transplantation has beneficial effects on T1DMIn 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: Human clinical trials, 53 participants, T1DM, glutamic acid decarboxylase (GAD)

PPC 7

EFFICACY OF BILASTINE AND MONTELUKAST COMBINATION IN PATIENTS WITH COUGH DUE TO RESPIRATORY DISEASES

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Cough is a natural reflex that aids in clearing the respiratory passages. While it serves to protect the airways, persistent cough may indicate underlying health conditions such as infections, allergies, respiratory diseases. Identifying the cause is essential for targeted treatment, offering relief and promoting respiratory health. This prospective observationalstudy aims to evaluate the efficacy of the Bilastine and Montelukast combination in managing cough associated with respiratory diseases. Conducted over 6-months period at Medicover Hospitals, with a sample size of 80 participants aged 18 years and above, experiencing respiratory symptoms, were included. Exclusions involved conditions like pregnancy and neuro-psychiatric problems. The study monitors demographics, lifestyle, biomarkers (PFTs, ECG, AEC, Total IgE), chest X-ray, and drug-related side effects. Patients with respiratory causes of cough received Bilastine 20 mg and Montelukast 10 mg combination. Follow-up assessments, conducted for two weeks, gauged treatment response through a questionnaire covering various aspects of quality of life, symptoms, and daily activities. Initial data collection categorized patients into respiratory and non-respiratory causes of cough, facilitating targeted treatment. Statistical analyses was employed to determine the significant measures of Bilastine and Montelukast in patients with respiratory diseases. Preliminary findings suggest favourable outcomes in patients receiving Bilastine and Montelukast combination therapy, along with improved quality of life. These findings along with previous research indicating the potential benefit of both medications in managing allergic rhinitis and chronic cough. This study contributes valuable insights into optimizing therapeutic strategies for cough associated with respiratory conditions, promoting personalized and effective patient care.

Keywords: Cough, Bilastine, Montelukast, Respiratory diseases, Allergic Rhinitis, PFTs, AEC, Total IgE

PPC 8

ADVANCEMENTS IN CELLULAR THERAPIES: CURRENT INNOVATIONS, CHALLENGES, AND FUTURE PROSPECTS

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Cell therapy represents a transformative approach in medicine, harnessing the regenerative potentialof living cells to address a wide range of diseases and conditions. Cell therapy encompasses diversetherapeutic modalities, including stem cell transplantation, immunotherapy, and tissue engineering.Stem cells, with their unique ability to differentiate into specialized cell types, serve as foundationalcomponents in many cell therapy approaches. Clinical applications of cell therapy span a broadspectrum of medical fields, from cardiovascular disease and neurodegenerative disorders to cancer and autoimmune conditions. Notably, immunotherapy strategies, such as chimeric antigen receptor(CAR) T-cell therapy, have emerged as groundbreaking treatments for certain types of cancer,demonstrating remarkable efficacy in clinical trials. Despite its immense potential, cell therapy facessignificant challenges. Manufacturing complexities, including cell sourcing, expansion, and qualitycontrol, pose logistical hurdles in scaling up production and ensuring consistency across batches. Additionally, regulatory frameworks governing cell therapy products require stringent oversight to ensure patient safety and efficacy. Ethical considerations, particularly regarding the use of embryonic stem cells and informed consent, further contribute to the complexity of the field. Looking ahead,ongoing research efforts aim to address these challenges and unlock the full therapeutic potential of cell therapy. Advances in gene editing technologies, such as CRISPR-Cas9, offer new opportunities for precise manipulation of cellular genomes, enhancing therapeutic outcomes and minimizing off- target effects. Moreover, interdisciplinary collaborations between academia, industry, and regulatory agencies drive innovation and accelerate the translation of preclinical discoveries into clinical applications. In conclusion, cell therapy represents a paradigm shift in modern medicine, offering personalized and regenerative treatments for a myriad of diseases. While facing formidable challenges, continued research and collaboration hold the promise of realizing the full potential of cell therapy to revolutionize healthcare delivery and improve patient outcomes.

Keywords: Cellular Solutions, Precision Medicine, Living Therapies, Regenerative Medicine

PPC 9

EVALUATION OF THE CLINICAL, BIOCHEMICAL, AND IMAGING OUTCOMES OF SAROGLITAZAR IN NON-ALCOHOLIC FATTY LIVE DISEASE: A CASE STUDY

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Non-alcoholic fatty liver disease (NAFLD) is a series of diseases, involving excessive lipid deposition in the liver and often accompanied by obesity, diabetes, dyslipidaemia, and other metabolic disorder. The current treatment strategies include lifestyle modifications and dietary changes. 25% of the global population is estimated to have NAFLD. The prevalence of NAFLD in India ranges from 9% to 53%. A 26-year-old male patient visited the clinic with his routine check-up blood reports of sugar and lipid profiles. The patient did not have any significant concomitant medical history or family history. The blood reports showed a high FBS (162 mg/dl) and HbA1c (7.6%)-confirming diabetes. His lipid parameters were deranged with total cholesterol (612 mg/dl), LDL (299 mg/dl), and TG (2832 mg/dl). He was advised to undergo SWE to assess the liver fat content, stiffness and obtain the liver fibrosis score. He was put on Saroglitazar 4 mg daily along with Atorvastatin 20 mg and for T2DM, he was advised lifestyle modifications (LSM). He was asked to re-visit the clinic after 3 months. Upon his revisit, the improvement in fasting plasma glucose (114 mg/dl), HbA1c (6.7%) and lipid profile {TC (122 mg/dl), LDL (65 mg/dl), and TG levels (92 mg/dl)} .Even the liver fibrosis score came down from 1.98 m/sec (moderate) to 1.59 m/sec (mild fibrosis).Other parameters like liver enzymes (ALT & AST) were reduced from the baseline. In this case considering these marked reductions in fasting glucose and lipid parameters, the on-going medications were continued along with LSM.

Keywords: NAFLD, metabolic disorder, Fasting blood sugar (FBS), Total cholesterol(TC), low-density lipoprotein (LDL), Triglycerides(TG), Shear wave elastography (SWE), Saroglitazar, lifestyle modifications (LSM)

PPC 10

EVALUATION OF CLINICAL OUTCOMES OF VERICIGUAT IN SUBJECTS WITH HEART FAILURE WITH REDUCED EJECTION FRACTION – A SINGLE CENTRE OBSERVATIONAL STUDY

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Medical management of Heart failure with reduced Ejection Fraction largely revolves around symptomatic management, with very few drugs having received regulatory approval for the disease. However, the use of these drugs comes with their own disadvantages, making it difficult to establish their efficacy in the treatment of HFrEF. There is reduced nitric oxide, sGC, and cGMP activity, leading to deleterious effects in the myocardium. Vericiguat, a novel oral sGC stimulator and is shown to enhance endogenous nitric oxide. Vericiguat's efficacy and safety profiles have been defined in the VICTORIA TRIAL encompassing 5050 foreign patients in abroad. The Indian FDA has approved the use of Vericiguat in adults with symptomatic chronic heart failure (HF) and an ejection fraction of less than 45 per cent to reduce the risk of cardiovascular death and heart failure hospitalization following an HF hospitalization or the need for outpatient intravenous diuretics. No data is available on Indian population about the clinical outcomes of vericiguat in heart failure patients with reduced ejection fraction, therefore we are establishing a single-centered observational study which serves to identify the safety and efficacy of vericiguat and evaluate the improvement of ejection fraction, check the secondary outcome and quality of life in the management of HFrEF in the Indian population within a time period of 6 months. This study supports vericiguat use in the treatment of heart failure with reduced ejection fraction, providing information on drug effects, usage, safety, efficacy, and awareness in Indian population.

Keywords: Vericiguat, reduced ejection fraction(rEF), heart failure(HF), VICTORIA TRIAL, soluble guanylate cyclase(sGC)

PPC 11

SPINAL MUSCULAR ATROPHY

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Spinal muscular atrophy (SMA) is a genetic (inherited) neuromuscular disease that causes muscles to become weak and waste away. People with SMA lose a specific type of nerve cell in the spinal cord (called motor neurons) that control muscle movement. Without these motor neurons, muscles don't receive nerve signals that make muscles move. The word atrophy is a medical term that means smaller. With SMA, certain muscles become smaller and weaker due to lack of use. Approximately 10,000 to 25,000 children and adults are living with SMA in the United States. It's a rare disease that affects one out of 6,000 to 10,000 children. A person with SMA inherits two copies of a missing or faulty (mutated) survival motor neuron 1 (SMN1) gene. One faulty gene comes from the mother and the other comes from the father. An adult can have a single copy of the defective gene that causes SMA and not know it. There are 4 types of SMA1. SMA type I, also called Werdnig-Hoffmann disease or infantile-onset SMA 2. SMA type II, the intermediate form 3. SMA type III (Kugelberg-Welander disease) . SMA type IV. A blood test is available to look for deletions or mutations of the SMN1 gene. This test identifies at least 95 percent of SMA Types I, II, and III and may also reveal if a person is a carrier of a defective gene There is no complete cure for SMA. Treatment consists of managing the symptoms and preventing complications. In may 2019 FDA approved the Zolgensma gene therapy for children under 2 years who have infanitile SMA. Accompanying the gene therapy is physiotherapy, rehabilitation therapy for improvisation of posture and motion.

Keywords: Spinal muscular atrophy (SMA), neuromuscular disease, Werdnig-Hoffmann disease, Zolgensma gene therapy

PPC 12

A PROSPECTIVE OBSERVATIONAL STUDY ON THE SAFETY AND EFFICACY OF DAPAGLIFLOZIN IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Persistent elevation of blood glucose levels, known as chronic hyperglycemia, is a metabolic condition indicative of diabetes mellitus, usually the consequence of the diminished release of insulin and resistance, leading to complications like microvascular, macrovascular, DKA, and HHS issues. This prospective observational study aims to determine the safety and efficacy of dapagliflozin in T2DM patients. Dapagliflozin selectively targets sodium-glucose 2 co-transporters, offering a focused therapeutic approach. The research emphasizes real-world evidence to look into how dapagliflozin affects sugar regulation, safety profiles, prescribing patterns, patient characteristics, and adverse events. The project aims to provide practical insights into dapagliflozin's application in managing T2DM, aiding informed clinical decision-making. One hundred patient case records were gathered in a prospective observational study that took place for six months. Prescription patterns were examined by considering age, gender, BMI, co-morbidities, and various brands of dapagliflozin. This analysis was conducted through a patient-level survey conducted in both OP and IP hospital departments, aiming to discern the safety and efficacy of dapagliflozin. Within the study, dapagliflozin was predominantly prescribed for individuals aged 51-70, with a majority of male patients. The prescribed doses were deemed appropriate. In a sample of 100 patients, the mean fasting plasma glucose (FPG) decreased from 170.9 mg/dL before dapagliflozin administration to 133.1 mg/dL, indicating a substantial and positive effect of circulating sugar concentrations. Throughout this research, dapagliflozin was given to individuals diagnosed with T2DM. This medication is intended to reduce elevated sugar levels in the blood. No patients reported serious adverse effects associated with the use of dapagliflozin. However, 5% of participants experienced minor side effects such as dry mouth, slightly elevated serum creatinine levels, and increased urine production.

Keywords: Type 2 diabetes, Dapagliflozin, and SGLT 2

PPC 13

INCIDENCE AND RISK FACTORS OF SURGICAL SITE INFECTIONS IN ONCOLOGIC PATIENTS: THE ROLE OF ANTIBIOTICS AND EVALUATION OF RESISTANCE

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A surgical site infection is an infection that occurs after surgery in the part of the body where the surgery took place. Surgical site infection generally occurs within 30 days after the procedure. Multiple factors contribute to the surgical site infection in which microbes interact with the host. The present study is aimed to investigate the incidence and identify risk factors associated with surgical site infections (SSIs) in oncologic patients, while examining the impact of antibiotic usage and evaluating patterns of antibiotic resistance within this population. This is a prospective observational single centre study. The study focused on patients diagnosed with cancer undergoing surgical interventions. We have collected data of patients diagnosed with carcinoma of breast, tongue, stomach, thyroid, endometrium, ovary, penis, rectum etc, and underwent surgery. The study also focused on role of antibiotics and their resistance. Data of 30 patients were collected. We observed that 3 patients have SSIs. The mostly prescribed antibiotic include Cefixime. Magnex forte (cefoperazone and salbactum), and Piptaz are less frequently prescribed. The SSIs are observed in patients using cefoperazone. The study concludes that existing antibiotics prescribing practices are effective in preventing SSIs and completion of antibiotics treatment course shown excellent results in patients.

Key words: Surgical site infections (SSIs), antibiotics, resistance, carcinoma

PPC 14

A PROSPECTIVE STUDY TO EVALUATE THE "ROLE OF TIMING OF VASOCONSTRICTOR ADMINISTRATION IN PATIENT WITH ACUTE VARICEAL BLEEDING

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The study endeavors to evaluate the optimal timing for EVL(Endoscopic Variceal Ligation) banding and seeks to analyse the initiation,process,duration and potential complications of employing vasoactive agents in treatment of variceal bleeding.Vareiceal haemorrhage is nothing but the rupture of variceal wall due to excessive wall tension and is one of the most immediate life-threatening complications in patients with cirrhosis.70% of GI bleeding events in patients with portal hypertension are due to variceal bleeds.Vasoactive agents has been shown to improve mortality in variceal bleeding and is effective as endoscopic therapy at reducing mortality, haemostasis and to prevent re-bledding. But there is no definitive consensus about timing of vasoactive agents Initiation,duration and its long-term effect on outcome of variceal bleed, requirement of blood products, recurrence and control of GI bleed. About 30-50% of patients admitted for the first episode of variceal bleeding die within 6 weeks. In this study, we like to optimise the timeline for development of EVL from onset of variceal bleed and intend to evaluate the APASL severity score in relation to five-day treatment failure, in-hospital mortality, need for ICU, length of hospital stay, recurrence of bleed,and also study the prevelance of renal dysfunction, infections and any other complications if present.

Keywords: Vasoactive agents, variceal hemorrhage, Endoscopic variceal ligation

PPC 15

THE IMPACT OF CLINICOPATHOLOGICAL FEATURES AND TREATMENT APPROACH FOR THE OUTCOME OF IGA NEPHROPATHY IN INDIAN POPULATION

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IgA Nephropathy is most common primary glomerulonephritis world-wide. The incidence of IgA Nephropathy ranges from 4.0% to 35.5% in the world , with a higher occurrence in Asian countries, particularly India.. IgA nephropathy is related to auto antibodies against immunoglobulin A1 (IgA1) with poor O-glycosylation. IgAN often progresses slowly without symptoms signifying early detection. This study is being done to build up the data on the clinico-epidemiological and treatment profile of IgA Nephropathy. There are only few studies to document the prevalence or clinicopathological spectrum of IgA Nephropathy in India. Aim of index study was to evaluate the scenario of IgA Nephropathy in India. Patients meeting the inclusion criteria outlined were enlisted in a retrospective observational study that spans 6 months. Relevant laboratory parameters (serum creatinine, urine protein creatinine ratio and serum albumin, eGFR, microscopic haematuria, serum potassium,), all kidney biopsies were reviewed and scored according to the oxford classification MEST, IFTA scoring and treatment approaches (non- immunosuppressive and immunosuppressive). The acquired data was subsequently be subjected to analysis utilizing suitable statistical tests that align with the study's objectives. This rigorous methodology aims to shed light on the impacts of various factors and treatments on IgA Nephropathy outcomes. This study assessed the effect of treatments on creatinine levels, UPCR showed the reduction ($p > 0.001$) and e GFR significantly improved ($p < 0.001$). Significant reductions in serum creatinine level and in the urine protein-to-creatinine ratio, and increases in the estimated glomerular filtration rate (eGFR) were observed when immunosuppressant and oral steroids were combined. Treatments with individual immunosuppressant, oral steroids by themselves, mycophenolate mofetil (MMF), or cytochrome P450 (CYP) inhibitors were not as effective as this combination therapy. To a lesser degree, non-immunosuppressive therapies did, however, also have positive results.

Keywords: IgAN, UPCR, Creatinine, eGFR, Immunosuppsants

PPC 16

ANTIBIOTIC RESISTANCE CURRENT CHALLENGES AND FUTURE STRATEGIES

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Antibiotic resistance represents a critical threat to global health, and leading to increased morbidity, mortality, and healthcare costs. The primary challenges contributing to this crisis include the overuse and misuse of antibiotics in both human medicine and agriculture, a lack of rapid and precise diagnostic tools, and a significant slowdown in the development of new antibiotics. Overprescription and improper use accelerate the evolution of resistant strains, while inadequate infection control and poor sanitation further facilitate the spread of resistant bacteria .There is an urgent need for investment in research and development to discover new antibiotics and alternative treatments, such as bacteriophages(Inoviridae) therapy has been granted emergency use authorization (EUA) by the U.S. Food and Drug Administration (FDA), antimicrobial peptides(Daptomycin-[cubicin]), and vaccines such as Pneumococcal & HibVaccines. Rapid diagnostic technologies can also play a key role by enabling more precise and timely identification of infections, thereby reducing unnecessary antibiotic use. Additionally, a robust global response involving coordinated policy implementation is essential, which includes enhancing surveillance systems to monitor antibiotic resistance patterns, funding research initiatives, and raising public awareness about the responsible use of antibiotics. Addressing antibiotic resistance with a comprehensive strategy will help secure the longevity of antibiotics as a cornerstone of modern medicine.

Keywords: Antibiotic, global health, sanitation, antimicrobial peptides, cornerstone

PPC 17

TARGETING DNA REPAIR TO OVERCOME THE CANCER CHEMORESISTANCE

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Chemo resistance remains a significant challenge in cancer treatment, limiting the efficacy of chemotherapy and contributing to disease progression and relapse. One promising strategy to overcome chemo resistance is to target DNA repair pathways employed by cancer cells to counteract the cytotoxic effects of chemotherapy agents. Specifically, targeting proteins involved in DNA damage recognition, repair, and signalling, such as PARP inhibitors (olaparid, rucaprid, niraparid, talazoparid) DNA-PK inhibitors (peposertib), and checkpoint kinase inhibitors (prexasertid), represents a promising avenue for enhancing the sensitivity of cancer cells to chemotherapy. Additionally, combination therapies involving DNA repair inhibitors and conventional chemotherapeutic agents show potential synergistic effects in preclinical and clinical studies. Furthermore, the identification of biomarkers predictive of DNA repair inhibitor response can aid in patient stratification and personalized treatment strategies. On-going research focuses on refining these strategies to achieve better clinical outcomes in cancer patients.

Keywords: Chemo resistance, Cancer cell, cytotoxic effects, DNA damage, Chemotherapy

PPC 18

POWER OF ARTIFICIAL INTELLIGENCE IN ONCOLOGY RESEARCH

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Artificial intelligence (AI) has revolutionized clinical research and treatment by identifying intricate patterns in medical data and providing quantitative evaluations of clinical conditions. In today's complex terrain of available medical data, AI can play a crucial role in enhancing traditional data analysis methods.. The synergy between AI and oncology holds promise for accelerating drug discovery, optimizing clinical trial design, and improving patient outcomes. The integration of Artificial Intelligence (AI) in oncology research has

revolutionized the landscape of cancer diagnosis, treatment, and prognosis. This paper explores the transformative potential of AI technologies, including machine learning, and natural language processing, in advancing oncological research. AI-driven algorithms enable comprehensive analysis of vast datasets, including genomics, imaging, and clinical records, facilitating early detection, personalized therapy selection, and prediction of treatment outcomes. However, challenges such as data quality, interpretability, and ethical considerations necessitate on going interdisciplinary collaboration and regulatory frameworks. A case study from 2020 demonstrated that an AI model developed by Google Health significantly outperformed radiologists in detecting breast cancer from mammograms, reducing false negatives by 9.4% and false positives by 5.7%. This showcases AI's potential to enhance diagnostic accuracy and efficiency in oncology, potentially leading to earlier and more accurate cancer detection. This abstract highlights the pivotal role of AI as a transformative tool in shaping the future of cancer care, driving precision medicine approaches, and ultimately, combating the global burden of cancer.

Keywords: Artificial Intelligence (AI), Diagnosis, Oncology, Transformative tool

PPC 19
ASSESSMENT OF ANTIULCER POTENTIAL OF HOLOSTEMMA ADA KODIEN

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Peptic ulcer is most frequent cause of morbidity and mortality worldwide so study was designed to explore antiulcer potential of leaves of Holostemma ada kodien against ethanol induced mucosal damage and pyloric ligation induced gastric lesions. Ethanol related ulcer was induced using 1 mL/kg b.w, p.o. Methanolic extract of Holestemma ada kodien (MEHK) was extracted using Soxhlet apparatus. Oral dose of 250, 500 mg/kg b.w/p.o were selected and freshly prepared for the study. Ulcer index, % ulcer protection was calculated and conducted at 6 hr after pylorus ligation. The total acidity and free acidity were decreased, pH was increased and ulcer index was decreased by MEHK 250 and 500 mg/kg b.w., p.o. in pylorus ligation model. Protection is due to the presence of Flavonoids, Tannins, Phenolics, Alkaloids, Saponins, Steroids, Terpenoids. Higher flavonoids and tannins content were estimated by using Aluminium chloride and Folin-Ciocalteu method in the leaves. The highest phenolic contents (polyphenols) were found in the leaf extract (202 mg GAE/g extract). Results showed prominent antiulcer potential as compare to standard drug Omeprazole.

Keywords: Antiulcer activity, Holestemma ada kodien, Ethanol, Pylorus ligation.

PPC 20
CAR T-CELL THERAPY – A PRECLINICAL INVESTIGATION

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Chimeric antigen receptor (CAR) T cells form part of a broad wave of immunotherapies that are showing promise in early phase cancer clinical trials. This clinical delivery has been based upon preclinical efficacy testing that confirmed the proof of principle of the therapy. However, CAR T-cell therapy does not exist alone as T cells are generally given in combination with patient preconditioning, most commonly in the form of chemotherapy, and may also include systemic cytokine support, both of which are associated with toxicity. Consequently, complete CAR T- cell therapy includes elements where the toxicity profile is well known, but also includes the CAR T cell itself, for which toxicity profiles are largely unknown. With recent reports of adverse events associated with CAR T-cell therapy, there is now concern that current preclinical models may not be fit for purpose with respect to CAR T-cell toxicity profiling. Here, we explore the preclinical models used to validate CAR T-cell function and examine their potential to predict CAR T-cell driven toxicities for the future.

Keywords: CAR T cells, Immunotherapies, Adoptive cell therapy, Cytokine storm, Preclinical models, Toxicity.

PPC 21

PERSONALIZED MEDICINE: MOTIVATION, CHALLENGES AND PROGRESS

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There is a great deal of hype surrounding the concept of 'personalized' medicine. Personalized medicine is rooted in the belief that since individuals possess nuanced and unique characteristics at the molecular, physiological, environmental exposure and behavioral levels, they may need to have interventions provided to them for diseases they possess that are tailored to these nuanced and unique characteristics. This belief has been verified to some degree through the application of emerging technologies such as DNA sequencing, proteomics, imaging protocols, and wireless health monitoring devices, which have revealed great inter-individual variation in disease processes. In this review, we consider the motivation for personalized medicine, its historical precedents, the emerging technologies that are enabling it, some recent experiences including successes and setbacks, ways of vetting and deploying personalized medicines, and future directions, including potential ways of treating individuals with fertility and sterility issues. We also consider current limitations of personalized medicine. We ultimately argue that since aspects of personalized medicine are rooted in biological realities, personalized medicine practices in certain contexts are likely to be an inevitability, especially as relevant assays and deployment strategies become more efficient and cost-effective.

Keywords: Precision medicine, biomarkers, patient monitoring, genomics

PPC 22

PROFILE AND SURGICAL RISK SCORE OF TRANSCATHETER AORTICVALVE REPLACEMENT (TAVR) PATIENTS IN QUATERNARY CARDIAC CARE CENTER IN INDIA (A RETROSPECTIVE STUDY)

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Transcatheter aortic valve replacement (TAVR) has been a rapidly evolving field since the first valve was implanted in an inoperable patient with severe aortic stenosis in 2002. Transcatheter aortic valve implantation (TAVI) is a less invasive procedure, originally developed as an alternative for patients at high or prohibitive surgical risk. TAVR is an established alternative to surgical aortic valve replacement (SAVR) for patients with severe symptomatic aortic valve stenosis. The aortic valve is located between the aorta and the left ventricle of the heart. Aortic valve stenosis occurs when the valve partially narrows, obstructing blood flow from the heart into the aorta. Transcatheter aortic valve implantation involves placing a collapsible, bioprosthetic aortic valve inside the existing valve through a catheter, without the need for open-heart surgery. Balloon-expandable and self-expanding bioprosthetic valves are available. The European System for Cardiac Operative Risk Evaluation II (EuroScore II), logistic EuroScore(log ES), and the Society of Thoracic Surgeons (STS) score are the most commonly used scoring systems to stratify surgical risk. We aim to assess the profile and evaluate the surgical risk scores of the TAVR patients. Hence, we concluded that TAVR was safe and effective in patients with symptomatic severe aortic stenosis and surgical risk score was low in high-risk TAVR patients when compared to SAVR patients.

Keywords: Aortic valve stenosis, Surgical Aortic Valve Replacement, Transcatheter Aortic Valve Replacement

PPC 23

A COMPARATIVE STUDY OF ANTIMICROBIAL RESISTANCE PATTERN AMONG CHRONIC LIVER DISEASE AND CHRONIC KIDNEY DISEASE PATIENTS IN TERTIARY CARE HOSPITAL

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To Compare Antimicrobial Resistance Pattern among Chronic Liver Disease and Chronic Kidney disease patient in a tertiary care hospital. Antimicrobial Resistance (AMR) is a significant global health concern. Chronic Liver Disease (CLD) and Chronic Kidney Disease (CKD) patient s are vulnerable to infections and are frequently exposed to antimicrobial agents, increasing the risk of AMR development. This study aims to compare the patterns of antimicrobial resistance among CLD and CKD patients in a tertiary care hospital. A retrospective analysis was conducted on medical records of CLD and CKD patients admitted to a tertiary care hospital [2019] and [2022]. Demographic data, clinical characteristics, and microbiological profiles were extracted from the records. Antimicrobial susceptibility testing results were collected and analysed to identify resistance patterns among different organisms. The study included a total of [212] CLD patients and [78] CKD patients. The most common organisms isolated in both groups were E. coli, with 36.79% of CLD patients and 24.35% of CKD patients showing positive cultures. The resistance pattern varied among different organisms and antibiotic classes. Notably, resistance was higher in CKD patients compared to CLD patients (p < 0.05). Our study demonstrates that antimicrobial resistance pattern differs among CLD and CKD patients in a tertiary care hospital. CKD patients exhibited higher resistance rates to certain antimicrobial agents compared to CLD patients. These findings underscore the need for tailored antibiotic stewardship programs and infection control strategies in this patient population to optimize treatment outcomes and mitigate the spread of AMR.

Keywords: Antimicrobial Resistance, Chronic Liver Disease (CLD), CKD patients.

PPC 24

THE USE OF ARTIFICIAL INTELLIGENCE (AI) IN THE DRUG DEVELOPMENT AND DISCOVERY

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Artificial intelligence (AI) techniques have the potential to revolutionize drug release modelling, optimize therapy for personalized medicine, and minimize side effects. By applying AI algorithms, researchers can predict drug release profiles, Bioavailability, incorporate patient - specific factors, and optimize dosage regimens to achieve tailored and effective therapies. This AI-based approach has the potential to improve treatment outcomes, enhance patient satisfaction, and advance the field of pharmaceutical sciences. International collaborations and professional organizations play vital roles in establishing guidelines and best practices for data collection and sharing. Open data initiatives can enhance transparency and scientific progress, facilitating algorithm validation. Today's medications go to the business sector after an extensive and very costly process of drug development. It takes anywhere in the range of 10 to 15 years. Artificial Intelligence (AI) can significantly reduce the time included and also cut the expenses by more than half. With the present technique, for each 100 medications that achieve first stage clinical trials, only one goes ahead to wind up a genuine treatment.

Keywords: Clinical trial, Drug release, Bioavailability

PPC 25

DESIDUSTAT IN THE MANAGEMENT OF MULTIFACETED CKD: CASESERIES INSIGHTS

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This case series investigates the efficacy and safety of desidustat, an oral hypoxia-inducible factor prolyl hydroxylase inhibitor, in the management of chronic kidney disease (CKD) patients with anaemia, hypertension, and type 2 diabetes mellitus. The study aims to provide insights into the potential of desidustat as a therapeutic option for this complex patient population. A total of three CKD patients with anaemia, hypertension, and T2DM were enrolled in this case series. Desidustat elevates haemoglobin levels by stimulating endogenous erythropoiesis through hypoxia-inducible factor stabilization. Desidustat was administered orally at a starting dose of 100mg once daily and titrated based on haemoglobin levels and tolerability. The primary outcome measure was the change in haemoglobin levels from baseline to the end of the study period. Secondary endpoints included changes in blood pressure, renal function, and glycaemic control. Desidustat demonstrated significant improvements in haemoglobin levels over the course of the study period. The mean change in haemoglobin from baseline was clinically significant, with a majority of patients achieving target haemoglobin levels. Furthermore, desidustat demonstrated favourable effects on blood pressure control, with a notable proportion of patients experiencing reductions in systolic/diastolic blood pressure. Renal function remained stable throughout the study period, as evidenced by assessments of glomerular filtration rates and urinary protein levels. Regarding glycaemic control, a considerable percentage of patients experienced improvement in HbA1c levels, suggesting a potential beneficial effect of desidustat on glucose metabolism in CKD patients with T2DM. Overall, desidustat demonstrated promising efficacy and tolerability in CKD patients with anaemia, hypertension, and T2DM. Keywords: Desidustat, Anaemia, Oral hypoxia-inducible factor prolyl hydroxylase inhibitor, Haemoglobin levels.

Keywords: Antimicrobial Resistance, Chronic Liver Disease (CLD), CKD patients.

PPC 26

POLYCORIA

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Polycoria, an extremely rare pathological condition of eye in which a patient may experience multiple pupils in one eye or more than one papillary opening of iris. It may be in left, right or in both eyes. The general cause is unknown. It is caused mainly by the effect of teratogenic factors, coloboma of iris, intrauterine factors, iridocorneal endothelial syndrome, latrogenic effects, traumatic injury, and Axenfeld-Rienger syndrome. It is of two types i.e. true polycoria and pseudo polycoria. The primary sign is the appearance of multiple pupils. Blurred and poor vision, issues with glare, dim and double vision, bridge of iris tissues between the pupils are the other signs and symptoms. The patients with polycoria should consult ophthalmogist. The special examinations include study of papillary reaction, ultrasound of the eye, and sample with mydriatics, biomicroscopy of the eye, perimetry, and tonometry. The treatment includes iris plastic surgery, surgical correction, and symptomatic therapy. The surgical technique used pupilloplasty and double –armed polypropylene. The gene that causes polycoria is PRDM5 which is also linked with brittle cornea syndrome.

Keywords: Polycoria, iridocorneal endothelial syndrome, Axenfeld-Rienger syndrome, pupilloplasty, double –armed polypropylene, PRDM5, ophthalmogist.

PPC 27

S1 BASED CHEMOTHERAPY FOR VARIOUS GATRO INTESTINAL MALIGNANCIES IN INDIA

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Gastrointestinal (GI) Cancers are one of the most common cancers occurring worldwide and is the most common causes of cancer mortality. 5-Flourouracil is one of the commonly prescribed antineoplastic agents against gastric and colorectal cancers. Continuous infusion would be the optimal way of its administration. Oral drugs have several advantages compared with IV formulations including; higher patient preference, avoiding infusions and use of central catheters, fewer injection associated adverse events and lower cost. Fluoropyrimidines are the backbone of chemotherapy, drugs like capecitabine, S-1 as monotherapy or in combination with oxaliplatin, irinotecan or bevacizumab are as effective as intravenous 5- fluorouracil (5-FU).S-1 is a novel oral dihydropyrimidine dehydrogenase (DPD) inhibitory fluoropyrimidine(DIF) developed since 1980 for advanced GI cancers, consisting three pharmacologicalagents (at a molar ratio of 1:0.4:1) tegafur (FT) and two types of enzyme inhibitor, 5-chloro-2,4-dihydroxypyridine (CDHP) and potassium oxonate (Oxo). In clinical trials conducted atJapan and China, S-1 monotherapy has shown promising efficacy with a mild toxicity profilein patients with advanced different GI malignancies but the data is sparse in India. So, anobservational retrospective study was conducted at a tertiary care hospital to assess theeffectiveness and safety of S1 based chemotherapy. A total of 105 patients were included inthe study and the results has shown a significant therapeutic efficacy i.e.,20.95% showedpartial response (PR) or complete response (CR) and 34.28% has stable disease (SD) withmild toxicity profile including fatigue(10.47%), thrombocytopenia(9.52%), diarrhoea(8.57%), anaemia(7.61%), HFS(5.71%) and others(58.12%) in patients with various GI malignancies.

Keywords: Gastrointestinal (GI) Cancers, 5-Flourouracil, Fluoropyrimidines

PPC 28

PRECISION IN PRACTICE: NAVIGATING THE LANDSCAPE OF AI-DRIVEN ROBOTIC ASSISTANTS IN SURGICAL PROCEDURES

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"Precision in Practice: Navigating the Landscape of AI-driven Robotic Assistants in Surgical Procedures" delves into the transformative role of AI-driven robotic assistants in modern surgical settings. These assistants represent a paradigm shift in healthcare, offering unparalleled precision, reducing human error, and ultimately enhancing patient outcomes. The presentation explores the symbiotic relationship between human expertise and machine precision, emphasizing the collaborative nature of surgical innovation. While the promise of AI-driven robotic assistants is evident, significant challenges must be addressed for widespread adoption. Regulatory approval processes, the need for comprehensive surgeon training, and ensuring cost-effectiveness are formidable hurdles that require strategic navigation. By addressing these challenges head-on, the presentation seeks to illuminate pathways for the seamless integration of robotic assistants into surgical practice. Furthermore, the presentation highlights the ethical considerations inherent in the adoption of AI-driven technologies in healthcare. Ensuring patient safety, privacy, and autonomy remains paramount, requiring careful deliberation and adherence to ethical guidelines. Looking ahead, the presentation envisions a future where AI-driven robotic assistants redefine the boundaries of surgical care. By embracing innovation while safeguarding ethical principles, healthcare practitioners can harness the full potential of these technologies to optimize patient outcomes and advance the field of surgery.

Keywords: Precision in Practice, AI-driven Robotic Assistants, unparalleled precision

PPC 29
ORGAN CHIPS FOR REGENERATIVE PHARMACOLOGY

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Organ chips, also known as human organs-on-a-chip, are tiny microfluidic devices that replicate multicellular and multi tissue architectures and apply biomechanical cues that resemble those seen in vivo to enable human cells to carry out intricate organ-level tasks in vitro. Human organ chips contain engineered or natural miniature tissue grown inside microfluidic chips. It can replicate key aspects of human physiology providing insights into the studied organ function and disease pathophysiology. Human organ chips are being employed in place of animal models, as animal models are immoral and frequently fail to predict therapeutic efficacy or toxicity in the drug development and toxicology testing. It provides an alternative to conventional preclinical models for drug screening. Using organ chips systematically would help the pharmaceutical business save time and money. It helps to accelerate every stage of the drug discovery process starting from basic research to clinical trials with the least failure of drugs compared to current animal models. This abstract summarizes the current advancements in microfluidic culture devices designed to mimic specific human organ structure and functions, as well as the application of Organ Chips in regenerative pharmacology.

Key words: Microfluidic chips, Human organ chips, Animal models.

PPC 30
DNA ORIGAMI-BASED VACCINES TOWARD SAFE AND HIGHLY-EFFECTIVE PRECISION CANCER IMMUNOTHERAPY

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Therapeutic cancer vaccines are a form of immunotherapy in the making that could not only destroy cancer cells in patients, but keep a cancer from coming back and spreading. A cancer vaccine's effectiveness depends on the level and duration of the “alarm” its adjuvants can ring in APCs. Previously, researchers found that delivering adjuvant and antigen molecules to APCs simultaneously using nanostructures like DNA origami can increase APC activation. However, none of these approaches systematically investigated how the number and nanoscale arrangement of adjuvant molecules affect downstream tumour-directed immunity. Now, a research team at the Wyss Institute at Harvard University, Dana-Farber Cancer Institute (DFCI), Harvard Medical School (HMS), and Korea Institute of Science and Technology (KIST) has created a DNA origami platform called DoriVac, whose core component is a self-assembling square block-shaped nanostructure. Due to their nanoprecise spacing of adjuvant molecules in DoriVac vaccines, after they have been taken up by antigen-presenting immune cells, can more effectively engage the cells' activation machinery in intracellular compartments than free and unorganized adjuvant molecules.

Keywords: Dori Vac, Adjuvants, Nanostructures, Vaccines

PPC 31
ANTIBODY-DISPLAYING EXTRACELLULAR VESICLES FOR TARGETED CANCER THERAPY

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Extracellular vesicles (EVs) function as natural delivery vectors and mediators of biological signals across tissues. Here, by leveraging these functionalities, we show EVs decorated with an antibody- binding moiety specific for the fragment crystallisable (fc) domain can be used as a modular delivery system for targeted cancer therapy. The Fc-EVs can be decorated with different types of Ig-G antibody and thus be targeted to virtually any tissue of interest. Following optimization of the engineered EVs by screening Fc-binding and EV-sorting moieties, we show the targeting of EVs to cancer cells displaying the human epidermal receptor 2 or the

programmed-death ligand 1, as well as lower tumour burden and extended survival of mice with subcutaneous melanoma tumours when systemically injected with EVs displaying an antibody for the programmed-death ligand 1 and loaded with the chemotherapeutic doxorubicin. EVs with Fc-binding domains may be adapted to display other Fc-fused proteins, specific antibodies and antibody-drug conjugates.

Keywords: Extracellular vesicles, Drug delivery, Tumour immunotherapy, Clinical therapy, Specific antibodies

PPC 32

DUAL ROLE OF MIRTAZAPINE IN MANAGING DEPRESSION AND NAUSEA IN CANCER PATIENTS ON CHEMOTHERAPY – A PROSPECTIVE OBSERVATIONAL STUDY

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This prospective observational study investigates the utilization of mirtazapine in cancer patients undergoing chemotherapy. Mirtazapine, an antidepressant, is examined for its effectiveness in managing chemotherapy induced side effects and improving the overall well-being of cancer patients. This research explores the impact of Mirtazapine as an adjunct therapy in the oncological setting. To evaluate the efficacy of Mirtazapine in treating cancer related depression, nausea and sleep disturbances. To assess the depression and depressive symptoms using Montgomery-Asberg depression rating scale To assess the improvement in nausea and vomiting using clinical global impression rating scale. To evaluate the safety and tolerability of Mirtazapine in cancer patients. A prospective observational study was done to assess the utility of Mirtazapine as an antidepressant and antiemetic agent using MADRS and CGI measures for depression and nausea. A total of 27 patients were enrolled in the study. two patients withdrew due to incomplete data but 25 patients showed significant improvements in depression, appetite, sleep disturbances, nausea and vomiting with a 95% confidence interval. Mirtazapine effectively improved depression, nausea, sleep disturbances, appetite, and overall quality of life in cancer patients, suggesting it as a valuable treatment option. It is considered to be safe and well tolerated in most of the patients and also helped to reduce medication burden, cost and quality of life.

Keywords: mirtazapine, chemotherapy, Montgomery-Asberg depression, MADRS and CGI.

PPC 33

UNVEILING NOVEL ANTIBIOTICS: A BEACON OF HOPE AGAINST ANTIMICROBIAL RESISTANCE

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A topic that explores the discovery and development of new antibiotics as a potential solution to the growing problem of antimicrobial resistance. Antimicrobial resistance occurs when bacteria, viruses, fungi, or parasites evolve and become resistant to the drugs that were once effective in treating infections caused by them. The escalating threat of antimicrobial resistance poses critical challenge to global public health and necessitating urgent action to discover and develop novel antibiotics. The objective of this poster presentation is to showcase cutting edge research, emerging trends in antibiotic discovery, development .It may highlight the challenges faced in discovering and developing these drugs- such as the lengthy and costly processes involved in research clinical trials. The abstract might also mention the need for innovative approaches, such as exploring natural sources like plants, marine organisms, as well as utilizing advanced technologies - genomics, artificial intelligence in drug discovery. It also includes importance of combination therapies, antibiotic stewardship, and resistance mitigation strategies in preserving, prolonging their therapeutic lifespan. Through this presentation, I aim to raise awareness among the youth about antimicrobial resistance. Overall, this abstract aims to emphasize the significance of unveiling novel antibiotics in the fight against antimicrobial resistance, offering hope for a future where effective treatments for infections can be sustained.

Keywords: Antimicrobial resistance, Novel antibiotics, Combination therapies, Antibiotic Steward ship.

PPC 34

PHARMACOLOGICAL EVALUATION OF ANTI DIABETIC AND ANTIOXIDANT ACTIVITY OF CATHARANTHUS ROSEUS IN WISTAR RATS

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Catharanthus roseus, commonly known as Madagascar periwinkle, is a medicinal plant renowned for its diverse pharmacological properties. In this study we evaluated the possible antidiabetic and antioxidant activities of C. roseus (Catharanthus roseus) leaves in diabetic rats. Diabetes was induced by intraperitoneal injection of streptozotocin (STZ, 55 mg/kg body wt). Animals were randomly assigned to five groups. Group I, Normal control rats; Group II, Positive control (STZ inducing group); Group III, Glibenclamide 5mg/kg, p.o; Group IV & Group V, were treated with the methanolic extract of Catharanthus roseus (150 mg/kg) and (300 mg/kg) daily for 28 days. The blood sugar level was measured on day 0, 7, 14, and 21 of the study, using glucose strips and glucometer by collecting the blood from rat retro-orbital plexus for other plasma profiles, blood was collected from retro-orbital plexus of the rats. The plasma was separated for estimation of biochemical parameters and analyzed for lipid profiles (Serum cholesterol, HDL cholesterol), Serum creatinine, serum urea, SGOT, SGPT, and ALP. The plasma profiles were estimated by enzymatic method using reagent kit procedural guidelines and details. The Histopathology of pancreas and Statistical Analysis are also performed and we assayed the free radicals scavenging activity by 1-1Diphenyl, 2-picryl hydrazyl (DPPH) radical scavenging activity and Nitric oxide scavenging. The future study of this experiment results demonstrated that C. roseus with its antidiabetic and antioxidant activity could be a potential herbal medicine in treating diabetes.

Keywords: Catharanthus roseus, streptozotocin, serum glutamate oxygenate transaminase (SGOT), Alkaline phosphatase (ALP), antioxidant.

PPC 35

APPLICATIONS AND RECENT ADVANCES IN TRANSDERMAL DRUG DELIVERY SYSTEMS FOR THE TREATMENT OF RHEUMATOID ARTHRITIS

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Rheumatoid arthritis is a chronic autoimmune disease, with the features of recurrent chronic inflammation of synovial tissue, destruction of cartilage, and bone erosion, which further affects joints, tissue, organs, and systems, and eventually leads to irreversible joint deformities and body dysfunction. Several drugs have been used for the treatment of rheumatoid arthritis, through the oral and parenteral route, they reduce inflammation through regulating inflammatory factors, but their utilization is limited due to low availability, rapid metabolism, poor absorption, first-pass metabolism, and serious adverse effects. In contrast, transdermal drug delivery systems (TDDSs) can avoid these drawbacks and improve patient compliance, making them a promising option for the treatment of rheumatoid arthritis (RA). The dosage forms such as gel (microemulsion gel, nanoemulsion gel, transfersomal gel, nanomicelle gel), patch, drug microneedles, nanostructured lipid carrier, lyotropic liquid crystals, and drug loaded electrospinning nanofibers, which provide inspiration for the rich dosage forms of transdermal drug delivery systems for rheumatoid arthritis.

Keywords: Rheumatoid arthritis, inflammatory factors, TDDSs, nanocarriers

PPC 36

ROLE OF AMYGDALIN AS ANTICANCER AGENT

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Amygdalin also called as vitamin B17 is a natural cyanogenic glycoside associated with anti-tumour properties in addition to the antioxidative, antibacterial, anti-inflammatory and immune regulatory activities. It is medically interesting but controversial compound as it has anticancer activity on one hand and can be toxic via enzymatic degradation and production of hydrogen cyanide on the other hand. Vitamin B17 is derivative of natural food sources and most rich in seeds of apricots, apples, peaches. amygdalin is known to have anti-tumour effect in solid tumour such as lung cancer, bladder cancer and renal cell carcinoma by effecting cell

cycle, including apoptosis and cytotoxicity and regulating immune function. Vitamin B17 interacts with other antioxidants like vitamin A along with enzymes found in pancreatic juice to break down and eliminate injurious cells from the body. Vitamin B17 scientifically named mandelonitrile beta-D-gentiobioside is consider a nitroside. Laetrile is synthesized by hydrolysis reaction of amygdalin and extract in form of vitamin B1, is most well-known for potentially helping prevent cancer development through the production of hydrogen cyanide and is released into body's tissues and targets and destroy mutated cells. cyanide is thought to be the main anti-cancer component of vitamin B17 but is not fully proven in clinical studies as of today. further research is needed to elucidate the pharmacological mechanisms of amygdalin in terms of optimal dosage, the feasibility of combined use of amygdalin with other anti-tumour drugs, and even artificial synthesis of the active components in amygdalin, for the sake of enhancing its anti tumour activities and reducing its adverse effects for clinical use.

Keywords: Amygdalin; cancer; hydrogen Cyanide; apricots; cyanogenic glycoside

PPC 37

COMPARATIVE EVALUATION OF CLINICAL OUTCOMES OF DEXMEDETOMIDINE VERSUS WITHOUT DEXMEDETOMIDINE IN SURGICAL FIELD OF OTORHINOLARYNGOLOGY: A PROSPECTIVE STUDY

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This prospective study aimed to systematically compare the clinical outcomes of dexmedetomidine administration versus conventional anesthesia in nasal procedures. Dexmedetomidine, an α-2 adrenergic agonist renowned for its sedative and analgesic properties, was administered as a bolus dose followed by maintenance infusion during surgery. The objective was to evaluate the impact of dexmedetomidine on surgical outcomes and patient safety. Sixty patients were divided into two groups, with Group A receiving dexmedetomidine and Group B receiving routine anesthesia. Dexmedetomidine led to lower intraoperative blood pressure, heart rate, and mean arterial pressure, resulting in reduced bleeding during surgery. Postoperative hemodynamic stability was superior in Group A compared to Group B. These findings suggest that dexmedetomidine contributes to a bloodless surgical field and mitigates postoperative complications in nasal procedures.

Keywords: Nasal surgery, controlled hypotension, perioperative vitals, postoperative complications, dexmedetomidine, without dexmedetomidine, Boezaart scale

PPC 38

INNOVATIONS IN NEUROPHARMACOLOGY: EXPLORING NOVEL THERAPEUTICS FOR NEUROLOGICAL DISORDERS

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A neurological disorder is caused by a dysfunction in the brain or nervous system. This abstract provides an overview of recent innovations in neuropharmacology focusing on the development of new and innovative treatments for neurological disorders. The introduction highlights the importance of finding effective therapies for neurological conditions, emphasizing the urgent need for effective treatments to symptoms, disease progression and improves patients quality of life. The objective of the presentation is to showcase cutting-edge research and emerging trends in neuropharmacology, with particular focus on novel therapeutics. And to show the potential of innovations in neuropharmacology in providing new hope and improved quality of life for individuals with neurological disorders. The abstracts concludes with a discussion of challenges and opportunities in the field of neuropharmacology, including drug development barriers, translational research gaps. This presentation aims to inspire further research efforts and faster innovation in the treatment of neurological disorders.

Keywords: Novel targets in Depression and Anxiety, Neuroregeneration, Stem Cell Therapy, Precision Medicine in Epilepsy, Neuroinflammation, Neuroprotection

PPC 39

ANTIBODY-DRUG CONJUGATES IN CANCER TREATMENT: A REVIEW

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The development of antibody-drug conjugates (ADCs) has significantly impacted cancer therapy, progressing from foundational discoveries in the late 19th century to contemporary clinical applications. With the approval of the first ADC in 2000 and subsequent advancements, including over 30 ADCs in advanced clinical development, the therapeutic landscape for cancer patients has undergone a notable transformation. However, the prevailing empirical approach to systemic cancer therapy administration presents challenges, including potential under-treatment of aggressive disease and over-treatment of indolent conditions, along with frequent adverse effects. Robust prognostic markers are essential to differentiate disease aggressiveness levels, guide treatment decisions, and anticipate adverse effects. Serum-based prognostic markers like AFP, hCG, LDH, PSA, CEA, CA 125, and CA 15-3, along with tissue-based markers such as HER-2 in breast cancer, uPA, and PAI-1, have demonstrated significant prognostic value across various cancers. Multiparameter assays and proteomics offer additional avenues for prognostic assessment, although methodological rigor remains essential. The development of predictive biomarkers for treatment response is imperative in optimizing therapeutic outcomes and reducing toxicity. Companion diagnostics for targeted therapies, such as HER-2 status for trastuzumab in breast cancer and BCR–ABL mutations for imatinib resistance in CML, enable personalized treatment strategies. Patient selection strategies for clinical trials involving ADCs rely on prospective selection or retrospective analysis, each with its merits and challenges. Incorporating prognostic and predictive biomarkers into clinical practice enhances treatment decision-making, improves patient outcomes, and optimizes healthcare expenditure.

Keywords: Antibody, Cancer, Antibody drug conjugate

PPC 40

A COMPARATIVE STUDY TO DETERMINE THE SAFETY AND EFFICACY OF PROPHYLACTIC RIFAXIMIN IN PREVENTION OF HEPATI ENCEPHALOPATHY IN PATIENTS WITH CHRONIC LIVER DISEASE

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To assess the safety and efficacy of prophylactic Rifaximin in prevention of Hepatic Encephalopathy in patients with chronic liver disease. A Prospective, comparative, observational study conducted over six months in the Department of Hepatology, Asian Institute of Gastroenterology, Gachibowli. Included CLD patients above 18 without prior HE. Patients categorized into Rifaximin-treated and untreated groups. Primary outcome: HE incidence measured by MMSE score. Adverse effects, infections, and hospitalizations assessed via patient interviews, laboratory, and culture reports. 203 patients with CLD were divided into two groups: 103 Rifaximin-treated, while 100 untreated. The incidence of HE was observed to be 13.6% in the Rifaximin-treated group and 19% in the untreated group (p = 0.344), indicating no significant difference in HE occurrence between the two groups. When comparing adverse drug reactions, there were no significant difference in the incidence of nausea (p = 0.057), headache (p = 0.138), itching (p = 0.480) and infections (p = 0.057). However, significant differences were observed in the occurrence of dizziness (p = 0.019) and peripheral edema (p = 0.010). Hospitalizations didn't significantly differ between the two groups (p = 0.923). The

prophylactic Rifaximin did not significantly prevent Hepatic Encephalopathy in patients with chronic liver disease. Dizziness and peripheral edema were notable adverse drug reactions, while nausea, headache, itching, and infections showed less significance. Rifaximin did not effectively reduce hospitalizations. These findings suggest that Rifaximin may impose a cost burden on patients without significant clinical benefits, such as improved outcomes or reduced hospital admissions.

Keywords: Rifaximin, Hepatic Encephalopathy, chronic liver disease

PPC 41

EFFICACY AND SAFETY OF AZATHIOPRINE IN IBD: A CROSS-SECTIONAL PROSPECTIVE OBSERVATIONAL STUDY

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This study aims to assess the efficacy and safety of azathioprine, an immunosuppressant indicated for maintaining remission in both Ulcerative Colitis (UC) and Crohn's Disease. Inflammatory bowel disease (IBD) is a term for two conditions (Crohn's disease (CD) and Ulcerative colitis (UC)) that are characterized by repetitive episodes of inflammation of gastrointestinal tract (GIT) caused by an abnormal immune response to gut microflora. A very few Indian studies analyzing safety and efficacy of AZA with regards to inconsistency in patient responses to AZA due to genetic variations in TPMT and NUDT15. In the last two decades, India appears to be in an acceleration phase, with a rapidly increasing incidence but still with a low prevalence. The primary objective of the study to assess the efficacy of Azathioprine in patients with IBD (UC and CD), the adverse effects of Azathioprine, the dose required for maintenance of remission. The secondary objective is to evaluate the number of relapses on Azathioprine, requirement of biologics, steroids and other immunosuppressants, and development of strictures, fistula or any other complications during Azathioprine therapy.

Keywords: azathioprine, immunosuppressant, Crohn's Disease, Inflammatory bowel disease.

PPC 42

ASSOCIATION OF OBSTRUCTIVE SLEEP APNEA (OSA) WITH NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) IN OBESE VS NON OBESE PATIENTS: A COMPARATIVE STUDY

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This prospective observational study investigates the risk of obstructive sleep apnea in fatty liver patients between obese vs non-obese subjects by conducting sleep study (polysomnography). To determine the prevalence of obstructive sleep apnea in Non-alcoholic fatty liver disease and comparison between obese vs non-obese (NAFLD) subjects.To compare the risk of obstructive sleep apnea between non-obese vs obese Non-alcoholic fatty liver subjects. To establish the risk difference related to the gender preference. To differentiate the risk of sleep apnea according to the grade/stage of fatty changes in NAFLD subjects.A prospective observational study was done to assess the prevalence risk of Obstructive sleep apnea in Non-alcoholic fatty liver subjects between obese and non- obese using STOP-BANG score and Ultrasound abdomen of the subjects. In the study total of 59 patients enrolled to the study who are diagnosed with fatty liver (GRADE 1-3). Equally divided into two groups (Obese and non-obese) we have found that obese subjects have high risk of sleep apnea compare to non-obese subjects. In this study obese subjects are at higher risk compare to non-obese subjects for OSA and male subjects are at higher risk of both fatty liver and OSA. Also the severity of fatty liver increased in obese subjects with the presence of grade-3 fatty liver and more number of grade-2 fatty liver subjects in obese patients.

Keywords: NAFLD, OSA, STOP-BANG SCORE, POLYSOMONOGRAPHY, AHI (Apnea hypopnea index)

PPC 43

INTEGRATION OF PHARMACOGENOMICS AND THERANOSTIC WITH NANOTECHNOLOGY

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Modern molecular signature-based drug delivery systems must replace the outdated drug delivery system in order to meet the demands of the future healthcare system for medication. The therapies that are now being used are either less or ineffective, cause a lot of unpleasant responses. We require an inventive application of the existing scientific concepts because no single scientific discipline or principle can fully address all the issues. In order to give individualized, error-free, and targeted therapeutic agents, we are putting forth a revolutionary idea for nano formulation that is based on pharmacogenomics and theranostic. The basis for developing novel medications is the increased understanding of the human genome, which provides new avenues for researching drug-effect, gene-drug, and disease-gene interactions. Pharmacogenomics offers details on the diseases, the function of genes in the pathophysiology of diseases, illness biomarkers, medication targets, side effects, and the disposition of pharmaceuticals within the body. Theranostics makes use of the aforementioned data for real-time disease monitoring, diagnosis, and therapy. It is possible to create a nano formulation with customized dose forms that maximizes therapeutic impact and reduces unfavourable medication reactions. The idea that one drug fits all patients needs to be replaced with the idea that each drug should be tailored to a specific demographic.

Keywords : Pharmacogenomics , Theranostic Nanoformulation

PPC 44

RETT SYNDROME: A NEUROLOGICAL DISORDER

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Rett syndrome (RTT) is a neurological disorder caused by mutations in the X-linked genemethyl-CpG-binding protein 2 (MECP2), a ubiquitously expressed transcriptional regulator.Recent studies suggest that MECP2 is expressed in neurons and glial cells and that it will someday be possible to reverse the disorder even after birth when behavioral symptoms occur. Developmental potential for patients with Rett syndrome (RS) is difficult to predict. Some individuals with this syndrome achieve and maintain some functional skills. 60% of RS patients may retain their abilities to ambulate; the remainder lose ambulation or never walk because of atrophy, dystonia, and scoliosis. Following a period of normal neurological and physical development during the first 6–18 months of life, the first features of RTT begin to manifest in early childhood and appear progressively over several stages: stagnation (age 6–18 months), rapid regression (age 1–4 years), pseudo stationary (age 2–potentially life) and late motor deterioration (age 10–life). Characteristic symptoms of RTT include loss of acquired speech and motor skills, repetitive hand movements, breathing irregularities, and seizures. RTT patients may also suffer from sporadic episodes of gastrointestinal problems, hypoplasia, early-onset osteoporosis, bruxism, and screaming spells. Many children diagnosed with RTT have reduced brain volume compared with healthy individuals, consistent with a smaller head circumference. Trofinetide is a synthetic analog of glycine–proline–glutamate, the N-terminal tripeptide of the insulin-like growth factor 1 protein, and has demonstrated clinical benefit in phase 2 studies in Rett syndrome. In a phase 2 study in pediatric and adolescent females with RTT, treatment with trofinetide (200 mg per kg twice daily (BID)) for 6 weeks was generally well tolerated and provided nominally statistically significant improvements. RTT primarily affects females (1 in 10,000–15,000 live female births), but some males individuals also get affected.

Keywords: Rett syndrome, Trofinetide, Atrophy, X - linked gene, Scoliosis

PPC 45

PHARMACOLOGICAL EVALUATION OF ANTI-INFLAMMATORY AND IMMUNOMODULATORY ACTIVITY OF EXTRACT OF CUCUMIS SATIVUS IN RATS

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Inflammation is an important physiological reaction which occurs in response to a wide variety of injurious agents (e.g. bacterial infection, physical trauma, chemicalsor any other phenomenon) ultimately aiming to perform the dual function of limiting damage and promoting tissue repair. Inflammatory processes are required for immune surveillance, optimal repair, and regeneration after injury. Steroids like glucocorticoids and mineralocorticoids reduce inflammation or swelling by binding to corticoid receptors. Long- term corticosteroids use has several severe side effects eg. hyperglycemia, insulin resistance, diabetes mellitus, osteoporosis, anxiety effects. Cucumis Sativus is used to treat anti- inflammatory and immunomodulatory activity in rats. Cucumis sativus (peel), ethanolic extract anti-inflammatory and immunomodulatory activity in carrageenan induced inflammation models. Each one gram of an extract contains amount of Cucumis sativus (peel). 100gm of the dried powder of plant was taken and the extractions of the plant material were carried out using soxhlet assembly with ethanol for about 24hrs. The ethanolic extract was cooled & filtered. The yield of crude extract was stored in an air-tight desiccators & used for further analysis effect of a single dose extract oncarrageenan-induced paw oedema was studied in the first series of experiments. Animals were divided in five groups (n = 6), Group I: Control group receive only saline, Group II: Diseased control, Group III: Standard drug receiving diclofenac sodium 25mg/kg, Group IV: Poly herbal extracts 250 mg/kg, Group V: Poly herbal extracts 500 mg/kg.

Keywords: Inflammation, glucocorticoids, Cucumis sativus, carrageenan

PPC 46

GENE THERAPY IN CANCER

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Gene therapy, (recently frequently investigated) is an alternative treatment method that introduces therapeutic genes into a cancer cell or tissue to cause cell death or slow down the growth of the cancer. This treatment has various strategies such as therapeutic gene activation or silencing of unwanted or defective genes; therefore a wide variety of genes and viral or nonviral vectors are being used in studies. Gene therapy strategies in cancer can be classified as inhibition of oncogene activation, activation of tumour suppressor gene, immunotherapy, suicide gene therapy and antiangiogenic gene therapy. We explain gene therapy, gene therapy strategies in cancer, approved gene medicines for cancer treatment and future of gene therapy in cancer. Today gene therapy has not yet reached the level of replacing conventional therapies. However, with a better understanding of the mechanism of cancer to determine the right treatment and target, in the future gene therapy, used as monotherapy or in combination with another existing treatment options, is likely to be used as a new medical procedure that will make cancer a controllable disease.

Keywords: cancer, gene therapy, immunotherapy, mechanism of gene therapy.

PPC 47

PHARMACOLOGICAL AND PHYTOCHEMICAL SCREENING OF LEAVES OF TRIDAXPROCUMBENS FOR ITS ARTHRITIC ACTIVITY IN WISTAR RATS

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The objective of the present investigation is to evaluate the ethanolic extract of leaves of Tridax procumbens for its antiarthritic activity in experimentally induced arthritis to wistar rats. Rheumatoid arthritis (RA), a chronic, autoimmune disease and the causative factors that are responsible for development of disease are unknown. The keystone is a medication therapy for RA in disease-modifying anti-rheumatic drugs (DMARDs) and a newer class of medications called biologics.The treatment plan is employed for the treatment of the disease which

includes 4 different classes of drugs: NSAIDs, corticosteroids, DMARDs and biological agents. Shade dried powdered material of Tridax procumbens, leaves were used. The leaves exhaustively extracted with Ethanol (95%) using (40-60 0 C) Soxhlet's apparatus. In the present study, chief phytoconstituents of the medicinal plant was identified in order to relate their presence with bioactivity of the plant. Animals were divided into groups as group 1 as vehicle control , group 2 as negative control, group 3 as arthritic animal treated standard, group 4 as arthritic animal treated with 250 mg/kg of EETP, , group 5 as arthritic animal treated with 500 mg/kg of EETP. Biochemical estimations of Protein denaturation inhibition study and Proteinase inhibition study . Histopathological assessments were performed respectively to evaluate the arthritis in the meta tarsal joint and ankle joint of CFA induced arthritic rats at the end of the treatment of ethanolic extract of Tridax procumbens (EETP) treated rats. The future study of this experiment results demonstrated that leaves of Tridax procumbens shows antiarthritic activity.

Keywords: Tridax procumbens, autoimmune disease, antiarthritic, corticosteroids ,Protein denaturation inhibition.

PPC 48

COMBINATION OF L THEANINE AND VIT D3 ALLEVIATES CHRONIC STRESS

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Stress, particularly chronic stress, is a pervasive factor impacting both physical and mental health, leading to a wide range of adverse outcomes in daily life.DALYs Disability-adjusted life years which are defined by the World Health Organisation (WHO) as the total number of years lost as a result of illness, disability, or early death, provide a thorough assessment of the impact of disease and current estimate of mental and behavioural disorders alone account for 14%, with depression being the primary cause. Chronic Unpredictable Stress (CUS) models are widely utilised to study the mechanisms of stress-induced disorders and to evaluate potential therapeutic agents. This study investigates the synergistic effects of L-theanine and vitamin D3 on alleviating the physiological and behavioural consequences of CUS in animal models. L-theanine, an amino acid found in tea, is known for its anxiolytic and neuroprotective properties, while vitamin D3, a crucial nutrient for overall health, has been implicated in mood regulation and neuroplasticity and Vitamin D3 deficiency has been linked to increased vulnerability to stress and depression. Our research involved subjecting rodents to a series of unpredictable stressors over a specified period, followed by administration of a combination of both L-theanine and vitamin D3. Behavioural assessments were conducted to evaluate anxiety and depression-like behaviours.Our results of there was an increase in time spent in central in open field test and object exploration in Novel object recognition test and there was decrease in immobility time in forced swim test whereas grooming latency was increased in splash test which indicates that the combination of L-theanine and vitamin D3 significantly mitigated stress-induced behavioural deficits.These findings suggest that the combination therapy could offer a novel and potent strategy for managing chronic stress and its related disorders, warranting further investigation in clinical settings.

Keywords: Stress, CUS, L - Theanine, Vitamin D3,Stress markers,Combination therapy, Rodent models,Behavioural assessments,Chronic stress management

PPC 49

AMELIORATIVE EFFECT OF BETAINE ON BEHAVIOURAL PARAMETERS OF DIABETIC NEUROPATHIC PAIN

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Over 90% of patients with diabetes have diabetic neuropathy, a common consequence of both type 1 and type 2 diabetes. It is a debilitating complication of diabetes mellitus, characterized by progressive nerve damage leading to sensory disturbances, pain, and motor dysfunction. Diabetic neuropathic pain is a common symptom of diabetic neuropathy and is characterized by tingling, burning, sharp, shooting, lancinating, or even electric shock feelings. Betaine, a naturally occurring compound, has shown promise in mitigating the effects of diabetes- related complications. Thus, this study aimed to investigate the effect of betaine on animal model of

diabetic neuropathy pain. Male Wistar rats were induced with diabetes using streptozotocin and Nicotinamide and subsequently divided into groups as diabetic control, betaine low dose and high dose. Behavioural tests, including thermal, mechanical hyperalgesia and Allodynia assessments, were conducted to evaluate neuropathic pain. Our results demonstrated that betaine treatment significantly reduced the thermal hyperalgesia (89.75% & 92.33%), mechanical hypersensitivity (53.07% & 95.24%) and Hot and cold allodynia(85.32% & 99.07%) and (87.27% & 92.31%) associated with diabetic neuropathy compared to the control group in a dose dependent manner. These findings suggest that betaine may hold therapeutic potential in managing diabetic neuropathy by alleviating neuropathic pain and preserving nerve function. Further research is warranted to elucidate the mechanism of neuroprotective effect of betaine, its long-term safety, and clinical utility in improving outcomes for individuals living with diabetic neuropathy pain.

Keywords: Diabetes, Betaine, streptozotocin, Nicotinamide, Neuropathic pain, Hyperalgesia, Allodynia, Nerve function.

PPC 50

INTRANASAL DELIVERY AND TRANSFECTION OF MRNA THERAPEUTICS IN THE BRAIN USING CATIONIC LIPOSOMES

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Nucleic acid-based therapeutics, including the use of messenger RNA (mRNA) as a drug molecule, has tremendous potential in the treatment of chronic diseases, such as age-relatedneurodegenerative diseases. In this study, we have developed a cationic liposomal formulation ofmRNA and evaluated the potential of intranasal delivery to the brain in murine model.Preliminary in vitro studies in J774A.1 murine macrophages showed GFP expression up to 24 hand stably expressed GFP protein in the cytosol. Upon intranasal administration of GFP-mRNA/cationic liposomes (3 mg/kg dose) in mice, there was significantly higher GFP-mRNAexpression in the brain post 24 h as compared to either naked mRNA or the vehicle-treatedgroup. Luciferase mRNA encapsulated in cationic liposomes was used for quantification of mRNAexpression distribution in the brain. The results showed increased luciferase activity in the wholebrain in a dose-dependent manner. Specifically, the luciferase-mRNA/cationic liposome group (3mg/kg dose) showed significantly higher luciferase activity in the cortex, striatum, and midbrainregions as compared with the control groups, with minimal systemic exposure. Overall, theresults of this study demonstrate the feasibility of brain-specific, nonviral mRNA delivery for the treatment of various neurological disorders.

Keywords: mRNA therapeutics, intranasal administration, brain delivery, cationic liposomes.

PPC 51

PEG-FILGRASTIM: A COMPARATIVE ANALYSIS OF ITS INFLUENCE ON WBC AND NEUTROPHIL COUNTS IN BREAST CANCER PATIENTS UNDERGOING CYTOTOXIC CHEMOTHERAPY

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PEG-filgrastim, a long-acting granulocyte colony-stimulating factor (PEG-GCSF), is instrumental in the prophylaxis of chemotherapy-induced neutropenia. This study aims to elucidate the impact of PEG-filgrastim on WBC and neutrophil counts in breast cancer patients undergoing cytotoxic chemotherapy, providing insights into its effects on haematopoiesis. We conducted a retrospective observational analysis on 130 breast cancer patients receiving PEG-filgrastim as part of their chemotherapy regimen. White blood cell levels were monitored before and after alternating cycles of chemotherapy. The study evaluated the Temporal patterns of hematologic recovery. PEG-filgrastim administration resulted in a significant elevation of WBC and neutrophil levels during the course of chemotherapy, despite its cytotoxic effects. PEG-filgrastim demonstrates a potent and differential impact on neutrophil and WBC levels, significantly reducing the frequency of febrile neutropenia.

Keywords: Breast cancer, PEG-GCSF, chemotherapy, febrile neutropenia, haematopoiesis

PPC 52

EVALUATION OF CLINICAL OUTCOMES OF FLUTICASONE FUROATE vs FLUTICASONE PROPIONATE NASAL SPRAYS IN ALLERGIC RHINITIS - A PROSPECTIVE STUDY

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Allergic Rhinitis (AR) or hay fever is a chronic inflammation of nasopharynx that occurs as a response against inhaled allergen exposure triggered by immunoglobulin E (IgE)- mediated inflammation of nasal membranes. Allergic rhinitis is a symptomatic disorder triggered after inhalation of allergens. The nasal symptoms include nasal congestion, rhinorrhea, sneezing and nasal itching, whereas ocular symptoms include watery eyes, burning, redness and itching of eyes. In the current study we aimed the evaluation of Fluticasone Furoate vs Fluticasone Propionate nasal sprays in Allergic Rhinitis. - A Prospective study. The prospective study was conducted on Evaluation of Fluticasone furoate vs Fluticasone Propionate in treatment of Allergic Rhinitis patients was carried out. In a study involving patients with allergic rhinitis, the use of both of fluticasone furoate and fluticasone propionate has shown significant improvement in symptoms and quality of life. Fluticasone furoate, in particular, has demonstrated slightly higher efficacy in the therapy compared to fluticasone propionate. Fluticasone furoate is a potent corticosteroid that has been shown to effectively reduce inflammation in the nasal passages and provide relief from allergic rhinitis symptoms.

Patients who received fluticasone furoate reported a greater reduction in symptoms such as nasal congestion, sneezing, runny nose, and itching compared to those who received fluticasone propionate with less frequent dosing schedule resulting in cost effectiveness and more compliance. This highlights the superior efficacy of fluticasone furoate in managing allergic rhinitis symptoms and improving quality of life for patients.

Keywords: Allergic Rhinitis, Fluticasone furoate, Fluticasone propionate, intranasal steroids, quality of life.

PPC 53

COMPARISON OF SENTINEL LYMPH NODE DETECTION USING SINGLE DYE VERSUS DUAL DYE VERSUS TRIPLE DYE TECHNIQUE IN NODE NEGATIVE BREAST CANCER – A SINGLE INSTITUTE EXPERIENCE

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Breast cancer is a significant health concern, especially among Indian women. Sentinel lymph node biopsy (SLNB) is crucial for staging clinically node-negative breast cancer. In this study, we collected data to compare the efficacy of sentinel lymph node biopsy mapped with various techniques in patients with node negative breast cancer in both upfront cases as well as post neoadjuvant chemotherapy (NACT) cases. A retrospective, single centre analysis of the data of 40 patients who underwent SLNB was done. Different SLNB techniques were compared, including methylene blue dye (MB) alone, MB + technetium dye (MB + Tc), MB + indocyanine green dye (MB + ICG) and MB + Tc + ICG. Patient characteristics, neoadjuvant chemotherapy status, number of sentinel lymph nodes retrieved and number of sentinel lymph nodes positive were recorded. Results showed high SLN identification rates ranging from 97.7% to 100% across techniques, with dual and triple dye methods retrieving a median of 4 SLNs compared to 3 with MB alone. SLN positivity rates were notably higher with dual and triple dye techniques. Experienced practitioners at high-volume centers achieved consistent SLN identification rates regardless of technique. SLN identification was slightly better in upfront SLNB cases than those post-NACT. Data assessment was facilitated using statistical analysis. In conclusion, SLNB is effective for breast cancer staging. Dual and triple dye techniques offer advantages, particularly in post-NACT cases. These findings support the importance of SLNB in breast cancer management, emphasizing the need for optimal technique selection based on patient characteristics and treatment history.

Key Words: Sentinel lymph node biopsy, Breast cancer, Methylene blue dye, Indocyanine green dye, Technetium dye.

PPC 54

PHARAMACOGENOMICS IN PERSONALIZED MEDICINE: ENHANCING DRUG EFFICACY AND SAFETY

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Pharmacogenomics, the study of how genes affect drug response, plays a pivotal role in advancing personalized medicine. By tailoring drug therapies based on genetic profiles, pharmacogenomics aims to optimize therapeutic outcomes and minimize adverse drug reactions. This review explores the current landscape of pharmacogenomics and its clinical integration. Clinical trials incorporating pharmacogenomics testing show significant promise in enhancing drug efficacy and safety. The number of such trials increased markedly since 2000, particularly in oncology and mental health. For instance, pharmacogenomic markers like CYP2D6 and CYP2C19 are routinely used to guide Antidepressant and Antipsychotic therapy. Implementing pharmacogenomics in clinical settings involves evaluating evidence, selecting actionable drug-gene pairs, and integrating genotyping results in electronic health records and clinical decision support systems. Despite the potential benefits, several challenges impede the broad clinical adoption of pharmacogenomics. These include ethical considerations, high costs, and the need for healthcare provider education. Furthermore, the validity of pharmacogenomics data across diverse ethnic groups and real-world applicability of these findings require further investigation. In conclusion, pharmacogenomics holds the promise of revolutionizing personalized medicine by providing tailored therapeutic strategies. Continued research, coupled with advancements in technology and comprehensive clinical validation, is essential for realizing the full potential of pharmacogenomics in improving patient care.

Keywords: CYP2D6 and CYP2C19, Ethical considerations, Drug-gene pairs, Genetic profiles, Pharmacogenomics markers, Tailoring drug-therapies.

PPC 55

A CASE REPORT ON CONGENITAL PORENCEPHALY

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Porencephaly is an extremely rare congenital disorder of the central nervous system. It is a cavity filled with cerebrospinal fluid, in the brain's parenchyma. It is caused by ischemia, haemorrhage after birth or less commonly as a consequence of abnormal development, with incidence of 3.5 per 100,000 live births. It is usually related to perinatal vascular events, including cerebral ischemia or haemorrhage. Involvement of bilateral hemisphere is very rare presentation. We report a case of bilateral porencephaly. Porencephaly encompasses a number of conditions, and can then be divided into developmental, congenital, internal and external types. If communicating with the ventricle then it is internal and communicating with the subarachnoid space then external type. It is lined by white matter. Gliosis will develop if the insult is as early as 20 weeks of gestations. A study of an 1 year 4 month old boy who was presented with a chief complaint of drowsiness and not responding to commands and was admitted for further management. Clinical manifestations CT Brain and CSF examinations were done and findings manifested porencephalic cyst with moderate hydrocephalus, patient was advised VP Shunt, He was managed with Antibiotics, Antacids and Analgesics. Major treatment plans include Physiotherapy, Shunt, Neurosurgery that removes the cyst.

Keywords: Hydrocephalus, Cerebral Ischemia, Haemorrhage, Porencephalic Cyst, VP Shunt.

PPC 56

BETAINE SUPPLEMENTATION ENHANCED THE NEPHROPROTECTIVE EFFECT OF FLAXSEED OIL IN DIABETIC RATS

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Diabetic nephropathy is complication of diabetes mellitus that affects the kidneys. The kidneys play a crucial role in filtering waste products from the blood, and when they are damaged, they may no longer function properly. This can lead to a buildup of waste products and fluid in the body. Symptoms include swelling in the feet or ankles, fatigue, nausea, vomiting, loss of appetite, changes in urine output. Betaine and flaxseed oil have shown promise in mitigating the effects of diabetes-related complications. Male Wistar rats were induced with diabetes using streptozotocin and Nicotinamide and subsequently divided into groups: diabetic control, flaxseed oil, and combination of betaine and flaxseed oil. Our results manifest that betaine enhances the effect of flaxseed oil in combination treatment, which significantly reduced the levels of uric acid (61.50% & 88.50%), blood urea nitrogen (51.30% & 83.30%), creatinine (96.30% & 94.17%), albumin (78.60% & 91.50%) in blood, and glucose (94.85 & 98.93%), triglycerides (94.85 & 98.93%), cholesterol (92.50% & 98.64%) levels were also reduced compared to control group. These results indicate betaine and flaxseed oil could be promising therapeutic agents for the management of diabetic nephropathy.

Additional research is imperative to delve into the potential advantages and underlying mechanisms of betaine and flaxseed oil.

Keywords: Diabetes, Betaine, flaxseed oil, streptozotocin, Nicotinamide, Nephropathy.

PPC 57

A CASE STUDY ON RARE CONDITION:UTERUS DIDELPHS

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Didelphys is a rare congenital condition occurring in up to 4.3% of the women in the general population, and it affects mother and her foetus. Uterine Didelphys is also known as double uterus which is one of the least common amongst Mullerian Duct Anomalies [MDAs] that arise from abnormal embryological development of the mullerian ducts. Failure of fusion of mullerian ducts to form a single uterine body and cervix. This results in formation of double uterus. Uterine didelphys primarily affects the viability of pregnancy by causing cervical insufficiency that future contributes to complications such as ectopic pregnancy, abnormal placentation, miscarriages, and necessitate cesarean section, The vaginal septum formation which is present in 75% of Uterine didelphys patients. Most women are asymptomatic, but some present with dysmenorrhea. Various procedures such as 3D ultrasound, MRI, hysteroscopy can confirm the diagnosis. UD can be fixed by surgery to merge the two uterus, but mostly not recommended unless repeated pregnancy loss is experienced. Longitudinal vaginal septum excision is recommended. A case from Bangladesh: patient is 29 year old presented in her first pregnancy with spontaneous abortion. Pelvic sonogram at that time showed a diagnosis of uterus didelphys, patient in her had uncomplicated prenatal care and did not have signs of preterm labour and the pregnancy was carried in the left uterus. Patient presented at 38weeks with premature rupture of membrane and underwent labor with cytotec.

Keywords: Didelphys, mullerian duct anomalies(MDA's), cytotec, hysteroscopy.

PPC 58

OCIMUM TENUIFLORUM - PHARMACOLOGICAL EVALUATION OF ITS ANTHELMINTIC ACTIVITY

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Anthelmintics derived from plant source can be an answer to this worldwide problem as they form secure and non-toxic with a modified site of action. Ocimum tenuiflorum Linn known as Tulsi in India is a sacred plant for Hindus known from centuries and being used in Ayurveda for its varied healing properties belonging to the Labiatae family. To this purpose we have studied in vitro anthelminthic activity of Ocimum in comparison with albendazole. The powder of Ocimum tenuiflorum was taken from the herbal store. The study was done using earth worms' adult type due to their anatomical resemblance with the intestinal roundworm parasites of humans. The methanolic extract of leaves of Ocimum tenuiflorum, concentration 25, 50, 100 mg/ml was prepared. Albendazole was used as standard reference drug and its 20 mg/ml concentration was prepared by as per the prescribed method. The anthelmintic activity was performed according to standard screening methods. Methanol extract of Ocimum tenuiflorum has shown the dose dependent action, it showed maximum activity at 100mg/ml i.e. took 25 minutes to paralyze and 127 minutes to death of the worm, whereas Albendazole took 69 minutes to paralyze and 136 minutes to death of the worm. Methanol extract is more potent than control (NS) and albendazole.

Keywords: Tulsi, Ocimum tenuiflorum, Anthelmintic activity, Albendazole, Pheretima posthuma.

PPC 59

INNOVATIVE BIOLOGICAL INTERVENTIONS FOR ACUTE FLACCID PARALYSIS IN GUILLAIN - BARRE SYNDROME

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Guillain-Barré syndrome (GBS) is a rare but serious post-infectious immune-mediated neuropathy. It results from the autoimmune destruction of nerves in the peripheral nervous system causing symptoms such as numbness, tingling, and weakness that can progress to paralysis. GBS is currently considered the most common global cause of acute flaccid paralysis. Currently, standard therapy for Guillain-Barré Syndrome includes intravenous immunoglobulin or plasma exchange. Despite medical advances regarding these treatments, many treated patients do not reach full recovery. Therefore several biological agents have attracted the attentions from researchers during the last decades, and various studies have investigated their role in Guillain-Barré Syndrome.The present study aims to address emerging biological approaches to GBS while considering their efficiency and safety in treating the disease.Here in authors focused on the literature data concerning emerging biological therapeutic agents, namely ANX005 a monoclonal antibody designed to inhibit the complement pathway by targeting C1q , Imlifidase is an antibody cleaving enzyme that treats and breaks down igG antibodies,anti-C5 monoclonal antibody (Eculizumab), , anti-T cell monoclonal antibody, anti-CD2 monoclonal antibody, anti L-selectin monoclonal antibody, anti-CD20 monoclonal antibody (Rituximab), anti-CD52 monoclonal antibody (Alemtuzumab) and cytokine targets. By far, none of these agents have been approved for the treatment of GBS by the FDA. Current review represents a summary of what is already in regards and what progress is required to improve the immunotherapeutic approach of treating GBS via future studies.

Keywords: Guillain-barré syndrome, immunotherapy, biological, drug, therapy, treatment, monoclonal antibody

PPC 60

ADVANCEMENTS IN GENE TECHNOLOGIES: TRANSFORMING MEDICINE AND CLINICAL RESEARCH

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Gene therapy, the process of replacing defective DNA with exogenous 'good' DNA, has been a challenge for over 40 years due to limitations in genetic material introduction. Advances in exogenous gene addition and editing have shown promising clinical results, including correction of disease-causing mutations, therapeutic gene addition, and deletion of harmful genes. Genetic advances and biotechnology breakthroughs, such as CRISPR-CAS gene editing, have given gene therapy a new role in treating a broader range of diseases. Genetic testing is crucial for identifying and diagnosing diseases caused by genetic changes, and prenatal testing detects abnormalities in a baby's genes. Gene editing has revolutionized the treatment of various diseases and disorders, with promising results in clinical trials in HIV-positive human patients and applied to other viral pathogens. It has also provided new options for treating hematologic disorders, liver diseases, and genetically affected skin diseases. However, challenges remain, including safety and delivery. Advances in specificity and sensitivity of genome-editing tools are being made, and new technologies like targetable recombinases, CRISPR systems, and DNA-guided nuclease systems are being developed to expand the scope of genome editing.

Keywords: Gene therapy, Exogenous therapy, Mutations, Genome editing, Diagnosis, CRISPR, Target site.

PPC 61

A CASE SERIES ON SOVATELTIDE IN ACUTE ISCHEMIC STROKE MANAGEMENT

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Acute ischemic stroke (AIS) remains a leading cause of morbidity and mortality worldwide, necessitating urgent and effective treatment strategies. Among these, intravenous thrombolysis with alteplase and tenecteplase has demonstrated efficacy in reperfusion therapy. Yet, concerns persist regarding adverse effects and limitations in certain patient populations. Sovateltide, a promising therapeutic agent, has shown potential in improving outcomes in AIS patients, yet its safety profile warrants further investigation. In this case series, we present findings from a prospective analysis of AIS patients aged between 60 and 80 years, with common comorbidities including hypertension, diabetes mellitus, hypothyroidism, and coronary artery disease (CAD). The analysis includes a cohort of patients who received either alteplase or tenecteplase alone, as well as those who received sovateltide in addition to alteplase or tenecteplase. Sovateltide was administered according to a regimen of three doses per day on the 1st, 3rd, and 6th day. The adverse effect of bronchoconstriction was observed in a subset of patients who received sovateltide, prompting the need for further investigation into its safety profile. This subset of cases prompts a focused examination of the safety and efficacy profile of sovateltide in AIS management. By analysing these cases, we aim to elucidate the potential risks and benefits associated with sovateltide administration in this patient population and to provide comprehensive insights into the real-world application of sovateltide as an adjunctive therapy in managing AIS, particularly those susceptible to bronchoconstriction.

Keywords: Acute ischemic stroke, Sovateltide, Intravenous thrombolysis, Adverse effect, Bronchoconstriction.

PPC 62
A CASE STUDY ON STONE MAN SYNDROME

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Fibrodysplasia ossificans progressive is a debilitating autosomal dominant disease characterized by postnatal progressive heterotopic which tissue that connects things together ossification and congenital deformities of the big toes. Fibrodysplasia ossificans progressiva affects about one out of every two million newborns born world wide. Almost ninety percent of people with fibrodysplasia ossificans progressiva are misdiagnosed and treated wrongly, resulting in ineffective treatments. Approximately 700 cases have been identified so far around the world. Clinical examinations, radiographic evaluations, and ACVR1 gene mutation testing are all considered confirmatory approaches for early illness diagnosis. Here reporting on the case of a 45-year-old man who was admitted in hospital. He had clinical and radiological evidence of fibrodysplasia ossificans progressing, as well as multiple painful lumps on his back due to hard masses and rigidity of his shoulders, neck, and left hip. His left hip ossification was surgically removed, but he experienced an increased ossification reaction and early impairment as a result. Fibrodysplasia ossificans progressive is an uncommon and severe illness that, if misdiagnosed, can result in inappropriate surgical intervention and early paralysis with disastrous consequences. Hence need to educate clinicians and patients families concerning the disease, as well as its symptoms for early detection and how to prevent flare-ups, in order to improve quality of life.

Keywords: Fibrodysplasia ossificans progressive, Myositis ossificans progressive, Postnatal progressive heterotopic, Autosomal dominant.

PPC 63
A PROMISING DRUG DELIVERY METHOD COULD REPLACE INJECTIONS WITH PILLS

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For chronic conditions such as rheumatoid arthritis, treatment often involves lifelong injections. Fear of needles, injection-associated infection and pain are responsible for patients skipping doses, which encourages the development of new delivery strategies that combine efficacy with limited side effects to treat patients adequately. Researchers at Baylor College of Medicine have developed a new method of delivering medications for chronic conditions like rheumatoid arthritis, which often require lifelong injections due to fear of needles, infection, and pain. The study, published in the Proceedings of the National Academy of Sciences, aims to use Lactobacillus reuteri, a probiotic bacteria, as a new way to deliver medication orally. The researchers genetically modified L. reuteri to produce and release a peptide, resulting in significant reductions in disease symptoms in animal models. The bacteria's natural property of not remaining in the gut permanently could also allow for flexible treatment schedules. Further investigation is needed to bring this innovative drug delivery system to clinics, but the researchers believe it has the potential to simplify treatment for patients in the future. The bacteria could be encapsulated for easy storage on kitchen counters, making it convenient for patients to take them on vacation without refrigeration or injections. This method could revolutionize the delivery of peptide-based drugs and may have applications in treating various chronic inflammatory conditions.

Keywords: Rheumatoid Arthritis, lactobacillus reuteri, peptide based drugs, chronic inflammatory conditions.

PPC 64
ADVANCES IN PROSTHECTICS AND ORTHOTICS

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Over the past years, the field of prosthetics and orthotics has seen incredible innovations that used to be perceived as science fiction. This overview aims to shed light on such exciting developments, exploring how they are addressing the challenges faced by individuals with limb impairments and musculoskeletal conditions. Prosthetics and orthotics are fascinating fields that focus on designing and creating artificial limbs and supportive devices for people with physical disabilities or injuries. Prosthesis – An artificial appliance which substitutes the anatomically missing component. Orthosis – An artificial appliance that supports the body part for the purpose of stabilization or movement reminder. In the field of prosthetics, experts work to develop and fit artificial limbs, such as arms, legs, or hands that closely mimic the natural movements and capabilities of the missing limb. Prosthetic devices can be customized to meet the specific needs and preferences of each individual. In orthotics, exoskeletons and wearable robotics assist with movement and rehabilitation. Dynamic orthotic devices made from advanced materials offer better support and adaptability. On the other hand, involves the design and fabrication of supportive devices like braces, splints, or shoe inserts. These devices are used to correct or improve the alignment, stability, and function of various body parts, such as the spine, joints, or feet. They are lightweight, durable, and comfortable. This supports fewer repairs and replacements, Thus aim to improve mobility, function, and quality of life for individuals who may have lost a limb or require assistance with their musculoskeletal system.

Keywords: Flexible above knee socket design, prosthetics (prosthetic foot and ankle),upper limb prosthetics.

PPC 65
HUNT OF ANTI-MALARIAL DRUGS BASED ON PROTEIN SIMILIARITES

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This study was attempted to explore ligands with anti-malarial activity based on protein similarities using virtual screening and molecular dynamic stimulation. The study was carried out using various Data Base Uniprot, Blast-P, PDB (protein data bank) insilico tools; OpenBabel, AutoDock, EsayDockVina. We have used potential plasmodium protein sequence like AKT1, SIRT1and found human AKT1, human SIRT1 having more than >90% similarity. Further binding studies of human AKT1and SIRT1 inhibitors proved to be effective against plasmodium species. Plasmodium proteins result as antimalarial action. Collection of plasmodium falciparum AKT1 and SIRT1 Blast search collection of hits from Blast drugs corresponding to top hits. Protein IDs Docking of Drugs against plasmodium falciparum. AKT1 PDB IDs are 4OFG, 4OFF. Ligands Ipatosertib are showing good affinity and interaction with plasmodium falciparum AKT1. Also PDB ID 3JWP human SIRT1 inhibitors cambinol showing affinity towards plasmodium falciparum SIRT1. Further in-vitro and in-vivo studies are necessary to confirm their efficacy and to evaluate their drug potency.

Keywords: Repurposing, AKT1, SIRT1, BLAST-P, UniProt

PPC 66

NEUROPROTECTIVE EFFECT OF CITRUS SINENSIS PEEL ON PARKINSON'S ASSOCIATED WITH DEPRESSION IN HALOPERIDOL INDUCED PD RODENTS MODEL

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Neurodegenerative diseases, particularly related to aging, are increasing, but drug interventions are rarely curative. Parkinson's is a neurodegenerative disease having changes in dopamine levels which also causes depression. Citrus sinensis(orange), and its peel contains antioxidant properties are beneficial to humans. Using ethanol assolvent orange peel was subjected for maceration extraction technique. The extract was subjected for phytochemical analysis, and identified by using HPLC. Antioxidants, was assessed by invitro methods, revealed thatOS brought by free radicalsare reduced by EEOP. Consequently, lowers the risk of neurodegenerative disorders. This investigation was completed in Wistar rats, in which PD was induced with haloperidol 1 mg/kg, intraperitoneally. Anti-Parkinson's property was assessed in haloperidol induced PD rats using grip strength and wire hanging test, with two doses of EEOP i.e: 200mg/kg &400mg/kg compared against levodopa 5mg/kg, the result shows that extract at 400mg/kg has ability to increase the time of grip strength and sustained short durationin wire hanging test. The antidepressant activity was assessed in haloperidol induced PD rats using force swim test and tail suspension test by administering EEOP of two doses i.e; 200mg/kg& 400mg/kg compared against imipramine 5mg/kg, shows that PD rats exhibit considerable reduction in immobility time.The swimming and climbing time are significantly increases at 400mg/kg dose.The behavioral studies revealed that EEOP has neuroprotective property that protects neurons from haloperidol-induced cognitive and motor impairments.The mechanism of protection may be due to an escalation of cellular antioxidants.

Keywords: Neurodegenerative, Parkinson's disease (PD), Haloperidol, Neuroprotective, Citrussinensis, EEOP (Ethanolic Extract of Orange Peel), Oxidative Stress (OS).

PPC 67

IMMUNOSUPPRESSANTS: AN INTRODUCTORY OVERVIEW

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Immunosuppressive drugs are pharmacological agents that aid in the management of various medical conditions, ranging from autoimmune disorders to organ transplantation, they are also called antirejection drugs.These antirejection drugs prevent the rejection of transplanted organs by suppressing the recipient's immune response against the foreign tissue, they're are instrumental in managing autoimmune diseases, where the immune system mistakenly attacks healthy tissues. Conditions like rheumatoid arthritis, lupus, and multiple sclerosis benefit from immunosuppressive therapy, which reduces symptoms and prevents disease progression by reducing the harmful activity of the immune system. In Inflammatory conditions such as inflammatory bowel disease and psoriasis, immunosuppressants play a critical role in controlling excessive inflammation and managing symptoms. By modulating immune responses, these medications help to achieve remission, enhancing patient's quality of life. The use of immunosuppressants presents challenges and potential risks. Long-term immunosuppressive therapy may predispose individuals to certain complications, including metabolic disorders and an elevated risk of malignancies.In summary, immunosuppressants represent indispensable tools in modern medicine, offering effective treatment options for a diverse range of conditions characterized by immune dysregulation. Nonetheless, their use requires a balanced approach that considers both therapeutic benefits and potential risks, highlighting the importance of personalized treatment strategies and close clinical oversight.

Keywords: Immunosuppressants, pharmacological agents, organ transplantation

PPC 68

INTEGRATION OF MACHINE LEARNING IN RADIOLOGY FOR THE DIAGNOSIS OF LUNG CANCER: A LITERATURE REVIEW

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The integration of machine learning algorithms into radiological practices enhances the early detection and intervention of lung cancer. Despite the widespread use of ML studies in lung cancer diagnosis, there are still challenges that need to be addressed. Lung cancer remains a leading cause of death worldwide, emphasizing the urgent need for a more accurate and timely diagnosis for effective treatment. The primary aim of this review is to provide an insight into the recent advancements made in this aspect. A literature review was conducted by systematically searching the electronic database PubMed using inclusion and exclusion criteria. ML algorithms offer promising avenues for enhancing diagnostic accuracy by leveraging complex radiological data. ML-based approaches offer promising solutions for improving lung cancer detection and characterization using radiological imaging modalities such as computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography (PET).By overcoming the present challenges and conducting further research, the potential of ML in radiological practice can help improve lung cancer diagnosis and personalized patient care.

Keywords: machine learning, radiology, lung cancer, prediction, diagnosis, CT, PET, MRI.

PPC 69

DIGITAL TWIN IN SENIOR HEALTHCARE: A TRANSFORMATIVE APPROACH

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Digital twins, a dynamic fusion of technology and healthcare, are altering the landscape of medical and pharmaceutical care for the aging population. In pharmaceuticals, digital twins streamline drug development, ensuring efficiency and compliance. The application extends to personalized medicine, providing tailored treatments based on real-time patient data, particularly crucial for addressing the distinctive healthcare needs of seniors. In healthcare settings, digital twins facilitate precise simulations for surgical planning and diagnostics. They empower healthcare professionals with insights into patient health trends, enabling proactive interventions and improving the overall quality of care for seniors. Remote patient monitoring through digital twins becomes a pivotal tool in managing the health of elderly individuals. The integration of artificial intelligence amplifies the capabilities of digital twins, offering valuable insights into medication effectiveness and treatment outcomes. However, challenges related to data privacy, ethics, and regulatory compliance need careful consideration, especially in the context of senior care. In conclusion, Digital twins are virtual replicas of physical objects or systems, integrating real-time data and simulations. They enable real-time monitoring, analysis, and optimization, fostering insights for informed decision-making. Widely applied across industries, digital twins enhance efficiency, innovation, and the understanding of complex systems.

Keywords: Personalized Medicine, Real-Time Data, Internet of Things, Predictive Maintenance.

PPC 70

THERAPEUTIC POTENTIAL OF SHORT CHAIN FATTY ACIDS IN MANAGING HYPERLIPIDEMIA IN RATS WITH OBESITY

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Obesity is a global health concern closely associated with the development of hyperlipidaemia, a condition characterized by elevated levels of lipids in the bloodstream. Short chain fatty acids (SCFAs) have emerged as potential regulators of lipid metabolism due to their diverse physiological functions. This study aimed to investigate the role of SCFAs in obesity-induced hyperlipidaemia rats. Obesity was induced in Sprague-Dawley rats through a high-fat diet, leading to hyperlipidaemia characterized by elevated levels of serum triglycerides, cholesterol, and low-density lipoprotein (LDL) cholesterol. Following induction, rats were administered SCFAs via oral supplementation. Results revealed that SCFA supplementation significantly ameliorated hyperlipidaemia in obese rats. Serum triglyceride and cholesterol levels were markedly reduced following SCFA treatment, accompanied by a decrease in LDL cholesterol levels. Furthermore, SCFA supplementation promoted the up regulation of genes involved in lipid metabolism, including peroxisome proliferator-activated receptor alpha(PPARα) and fatty acid oxidation enzymes.In conclusion, short chain fatty acids show promise in mitigating obesity-induced hyperlipidaemia in rats by reducing serum lipid levels, up regulating lipid metabolism genes. Further research is needed to explore their clinical potential and determine optimal therapeutic strategies.

Keywords: Obesity, Hyperlipidaemia, High-fat diet, Short chain fatty acids, Lipid metabolism.

PPC 71

SYNTHETIC EMBRYOS – A MILESTONE IN DEVELOPMENTAL BIOLOGY

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Synthetic embryos are defined as structures that mimic early human embryos but are derived from pluripotent stem cells without using sperms, eggs or womb. In recent years, the demand for organ transplantation has increased, synthetic embryos can generate specific cell types for transplantation. Natural embryos do not provide accurate information on early stages of human development. These synthetic models could provide crucial information on biological causes of recurrent miscarriages. These embryos are alternative to human embryos for research, regenerative medicine and biotechnology. Synthetic embryos have been developed using 3D printing, stem cell differentiation, microfluidic systems, cell culture method by providing growth factors. Synthetic embryos offers many advantages which includes studying of early human development, developmental disorders, pregnancy loss. It decreases the waiting time for donors and are easier to observe. These synthetic embryos are also easier to manipulate using genome-editing tools and are useful in identifying the role of different genes in birth defects. Although it shows promising results, it has its set of challenges which includes ethical challenges and potential loss of genetic diversity preserved by natural reproduction. While these models can replicate aspects of early stage development of human embryos, they will not and cannot develop to the equivalent of postnatal stage humans and lack legal framework. In upcoming years, synthetic embryos could provide better fertility treatments, aid in organ transplantation, identify congenital disabilities and truly has the power to pave a way towards a world with synthetic humans.

Keywords: pluripotent stem cells, regenerative medicine, transplantation, birth defects, ethical issues.

PPC 72
WINGED SCAPULA: A CASE REPORT

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Scapular winging is a rare debilitating condition that leads to limited functional activity of the upper extremity. It is the result of numerous causes which includes traumatic, iatrogenic and idiopathic processes that most often result in nerve injury and paralysis of either the serratus anterior, trapezius & rhomboid muscles. Scapular winging is a rare lesion. Remak diagnosed 3 cases of serratus anterior paralysis in a series of 12,000 neurological examinations. Paralysis of the serratus muscle has been documented amongst athletes. A 13 years old female patient reported with complaint of gradually increased pain radiating from neck to right hand and with observation of protrude scapula. Examination for the disorder includes Electromyography (Needle EMG) and also X-Rays, MRI, CT scan. As it is caused by damage to the dorsal scapula nerve, patient was advised physical and massage therapy along with muscle relaxants, anti-inflammatory drugs & analgesics. Patient underwent Electrotherapy, Electro muscle stimulation(ultra sound therapy) Combined Tapping :- decreased pain with active movement observed including correction of posture. Non-surgical treatment including medications which improved the condition immediately. After few month of non-surgical treatment options, patient recovered from scapular winging. Patient Mental and physical stability favoured faster recovery through medications. Patient adapted maintaining good posture avoiding tasks that involve repetitive arm or shoulder movements reduces the risk of reoccurrence.

Keywords: Scapular Winging, Idiopathic, Nerve injury, Rhomboid Muscles, Protrude Scapula, Theme: Medical.

PPC 73
ANTIMICROBIAL POTENTIAL OF MEFENAMIC ACID COPPER COMPLEXES WITH DIETHYLAMINE AND BIPYRIDINE

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Mefenamic acid is a non-steroidal anti-inflammatory drug (NSAID) commonly used to treat pain, fever, and inflammation.One approach to enhancing the properties of mefenamic acid is by forming complexes with metal ions, such as copper. It is known the metal complexes once bound to organic drugs, can enhance the drug's biological activities, such as Anti Cancer, Anti Microbial, Anti Inflammatory. NSAIDS properties can be strongly improved when included in complexes using their compositional N and O donor atoms, which facilitates their coordination to metal ions. Complexation can alter the physicochemical properties of the parent drug, leading to improved pharmacological activity. In particular, copper complexes have been shown to exhibit enhanced antimicrobial activity compared to the parent drug.The formation of copper complexes with mefenamic acid, diethylamine, and bipyridine has been reported in the literature. The complexes were tested against a panel of eight bacterial strains, comprising five Gram-positive and three Gram-negative species, using the well diffusion method. The results revealed significant antimicrobial activity, with notable inhibition zones observed against several strains.However, While the preliminary findings are promising, further studies are warranted to elucidate the underlying mechanisms of action and to optimize the complexes for improved efficacy. This research contributes to the development of novel metal-based antimicrobial agents, which could provide a valuable addition to the arsenal against infectious diseases.

Keywords: NSAIDS, Mefenamic Acid, Diethylamine, Bipyridine, metal complex, Antimicrobial activity, Inhibition Zone.

PPC 74

THE FUTURE OF WOUND CARE: REVOLUTIONIZING HEALING WITH SMART BANDAGES

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When someone sustains a cut, burn, or other wound, their body usually takes care of it and heals itself. But things aren't always like this. Diabetes can impede the healing process and result in wounds that are difficult to heal, infected, and potentially fester. Chronic non-healing wounds are the primary cause of limb amputation and provide serious healthcare issues to a large number of people. Wound care affects patients' quality of life and is expensive for the healthcare system, making it an essential component of patient care. The creation of smart bandages has demonstrated significant promise for focused therapy, targeted treatment and wound monitoring. The advancements in smart bandage technology can track and measure a number of biomarkers in real time, including blood flow, pH, external pressure, moisture, temperature, and infection status. In order to provide focused treatment, smart bandages integrate the drug delivery systems that can release medication on demand in accordance with the state of the wound. Presently, significant innovations have been made in the design, fabrication, clinical applications, manufacturing, and medical uses of smart bandages which are anticipated to be a major advancement in wound care in the future due to their capacity to non-invasively diagnose wound parameters, lessens discomfort, and speed up wound healing.

Keywords: Smart bandages, Integrated systems, Biomarkers.

PPC 75

STUDY OF PRESCRIBING PATTERNS IN RENAL IMPAIRMENT PATIENTS

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This study investigates prescribing patterns in chronic kidney disease (CKD) patients, aiming to analyze and understand the diverse factors contributing to CKD prevalence. The sample of 360 individuals demonstrates a balanced gender distribution, with a diverse age composition, notably concentrated in the 46-55 age group. Overweight patients constitute the majority, emphasizing the prevalence of excess body weight. Urban areas dominate, and lifestyle factors such as sleep disturbance/work stress and a combination of smoking, tobacco chewing, and alcohol consumption are prevalent among CKD patients. Family history, including genetic factors, is also identified as significant. The study reveals varied drug utilization patterns, highlighting the complexity of managing CKD patients with drugs like beta-blockers, calcium channel blockers, anticoagulants, anti-diabetics, steroids, diuretics, and proton pump inhibitors. The findings underscore the importance of a multidimensional approach considering demographic, lifestyle, and medical factors in CKD management, providing insights for tailored interventions and treatment plans. Ongoing monitoring and research are crucial for refining strategies in CKD prevention and treatment.

Keywords: chronic kidney disease (CKD), 360 individuals, 46-55 age group, prevention and treatment.

PPC 76
GITELMAN SYNDROME – A RARE CASE REPORT

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Gitelman syndrome (GS) is an autosomal recessive, salt-losing tubulopathy characterized by renal potassium wasting, hypokalemia, metabolic alkalosis, hypocalciuria, hypomagnesemia, and hyperreninemic hyperaldosteronism. Gitelman syndrome is also referred to as familial hypokalemia-hypomagnesemia. GS is perhaps the most common inherited tubulopathy, with a prevalence of 1 to 10 per 40,000 and potentially more in Asia. The disorder is caused by biallelic inactivating mutations. The disease is a manifestation of a biallelic inactivating mutation in the SLC12A3 gene that encodes the thiazide-sensitive sodium chloride cotransporter (NCC) present in the apical membrane of cells on the distal convoluted tubule. To date, more than 350 mutations in SLC12A3 have been identified in these patients. The majority of patients are heterozygous for SLC12A3 mutations, but many GS patients are found to have only a single SLC12A3 mutation. On the pathophysiological point of view, GS represents a useful and interesting human model to better understand the clinical consequences of plasma hydro-electrolytes and acid-base derangements, associated with multiple hormonal alterations. The impact of this complex disorder involves cardiovascular, muscle-skeletal and some other physiological functions, adversely affecting the patient's quality of life. Laboratory tests that are used to diagnose Gitelman syndrome include blood tests to determine serum electrolyte levels, specifically low serum concentrations of magnesium and potassium and/or elevated serum concentrations of renin, and aldosterone. Treatment is symptomatic, which is supplementation with potassium and magnesium. We report a rare presentation of Gitelman's syndrome in a four-year-old boy with growth retardation. In present study we will be discussing a case on Gitelman syndrome, its treatment and clinical outcomes.

Keywords: Gitelman syndrome, inherited tubulopathy, biallelic inactivating mutations, Hypokalemia, hypocalciuria.

PPC 77
PHARMACOGENETICS: A TOOL FOR IDENTIFYING GENETIC FACTORS IN DRUG DEPENDENCE AND RESPONSE TO TREATMENT

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Pharmacogenetics is the study of the genetic bases of variability among individuals in response to drugs. It is the newest discipline of medicine .Human Genome Project is one of the crucial projects in which researchers are developing and learning relations in genes and its effect on the body's response to medications. Despite the limitations of pharmacogenomics ,there are novel approaches which are under clinical trials. In the near future, pharmacogenomics is applicable in neurodegenerative, cardiovascular disorders, HIV, cancer, asthma, etc.In a case study for severe depression with psychotic symptoms. Data on treatment selection and response to treatment before and after pharmacogenetic analysis were evaluated. For pharmacogenetic analysis, common functional variants in CYP1A2, CYP3A4, CYP2B6, CYP2C19, and CYP2D6 were genotyped, as a result the patient suffered from lack of efficacy and serious ADR of several medications, resulting in worsening depression and treatment resistance over the course of several months of treatment. Pharmacogenetic analysis provided important insights into the patient's pharmacokinetic phenotype and allowed us to personalize treatment and achieve remission of the depressive episode. In the case presented, we have shown how an individual patient can improve treatment outcome and patient well-being.Therefore, it is of great importance to conduct further pharmacokinetic and pharmacogenetic studies to better assess gene-druginteractions in psychopharmacotherapy.

Keywords: Pharmacogenomics, genomics, proteomics, personalized medicines, tailored drugs.

PPC 78

EVALUATION OF ANTI DEPRESSANT ACTIVITY BY POLYHERBAL EXTRACTION IN SWISS ALBINO MICE

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Depression is a highly common, potentially fatal illness that needs to be treated right away. Still, many depressive episodes go unreported. The antidepressant efficacy of polyherbal extract (PHE) was assessed in the current study using experimental animals. Aqueous extract of PHE was administered to mice, and after treatment, behavioral, neurological, and fatal signs were noted. We observed and compared the lack of motion time in the FST, and TST models with that of the conventional imipramine. A dose-dependent reduction in immobility time was observed in the PHE extract. Its exact mode of action is unknown, but it is thought to result from the inhibition of both the serotonin and norepinephrine transporters, which increases the availability of them in the synaptic gap. PHE exhibits optimal antidepressant efficacy at a dosage of 100 mg/kg body weight.

Keywords: Depression, PHE, Acute Toxicity Test, Forced swim test, Tail suspension test, Antidepressant activity.

PPC 79

EFFICACY AND SAFETY OF SOVATELTIDE AS AN ADJUVANT THERAPY WITH STANDARD TREATMENT VS STANDARD TREATMENT IN ACUTE ISCHEMIC STROKE: A PROSPECTIVE ANALYSIS

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Acute ischemic stroke is a sudden and severe impairment of blood flow to a part of the brain, resulting in damage to brain tissue due to the lack of oxygen and nutrients. Despite standard approved therapies like intravenous thrombolysis and mechanical thrombectomy large group of patients fail to achieve functional recovery by the end of three months. Sovateltide, a novel therapeutic agent, has shown promise in preclinical studies. This study aimed to assess the efficacy of sovateltide in combination with standard therapies compared to standard therapy alone in patients with acute ischemic stroke. This study is a Prospective Observational study consisting of patients who received either sovateltide plus standard therapy or standard therapy alone. Functional neurological outcomes were evaluated using the National Institute of Health Stroke Scale, modified Rankin Scale, and Barthel Index. Quality of life was assessed using the EuroQol-5 Dimensions and Stroke-Specific Quality of Life scales at the three-month follow-up. The results demonstrated that patients receiving sovateltide plus standard therapy showed significantly improved neurological outcomes compared to those receiving standard therapy alone, as evidenced by lower NIHSS and mRS scores and higher BI scores. Quality-of-life assessments showed higher EuroQol-5 Dimensions and Stroke-Specific Quality of Life scores in the Sovateltide group, indicating better overall well-being. The addition of sovateltide to standard therapies in acute ischemic stroke appears to enhance functional recovery and quality of life. These findings support further investigation and clinical implementation of sovateltide as a potential adjunctive treatment for improving outcomes in patients with acute ischemic stroke.

Keywords: Sovateltide, Acute Ischemic Stroke, thrombolysis

PPC 80
PHARMACOGENOMICS: OPTIMISING DRUG TREATMENTS

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Pharmacogenomics explores how genetic factors influence an individual's reaction to medications. The traditional way of developing drugs includes the designing based on an entire population as a target. At present, the P4 medicines (predictive, preventive, participatory, patient-oriented treatment faces many barriers and challenges but improves the care and therapy outcomes. The treatment of anxiety and depressive disorders majorly includes pharmacogenomics. The individual's genetics are studied and the drugs are personalised depending upon the response to the drugs. These variants affect how the body processes and reacts to drugs, directing personalized medication choices and dosages to enhance effectiveness and reduce side effects. The codeine is prescribed with consideration of genetic differences to prevent ineffective pain relief or toxic side effects. The pharmacodynamics and pharmacokinetics also play an important role during the formulation of the drugs tailoring. The enzyme cytochrome P450 (CYP) plays a major role in influencing the drug absorption and distribution which is expressed as membrane-bound proteins which are primarily located in the endoplasmic reticulum of the liver. Therefore, Pharmacogenomics: decoding genes for personalized meds, minimizing side effects, maximizing efficacy, revolutionizing treatment for healthier tomorrows.

Keywords: Pharmacogenomics, Cytochrome P450, Gene variability, Pharmacodynamics, Pharmacokinetics.

PPC 81
MICS – MINIMALLY INVASIVE CARDIAC SURGERY

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An enhanced version of heart bypass surgery for the treatment of coronary heart problems is called Minimally Invasive Cardiac Surgery, or MICS. With the help of specialized surgical instruments, the surgeon can access the heart through a small incision on the left side of the chest utilizing this approach. Without making any cuts, the heart can be reached through the gaps between the ribs. By comparison, this method is less intrusive than standard open-heart surgery, when the patient's chest cavity must be opened in order for the physician to reach the heart. A variety of cardiac diseases, such as atrial septal abnormalities, heart valve problems, and coronary artery disease, can be treated using MICS. Studies on minimally invasive cardiac surgery have revealed that the treatment has success rates that are similar to those of open heart surgery, with a few possible advantages. In the realm of cardiac surgery, MICS has become a ground-breaking method. With so many advantages and success rates that are comparable to open-heart surgery, minimally invasive cardiac surgery, or MICS, is revolutionizing heart surgery like never before. As of late, MICS has expanded to include Coronary Artery Bypass Graft (CABG) Surgery, or MICS-CABG. The fundamental goals of minimally invasive cardiac surgery (MICS)-CABG include patient comfort, an early return to normal activities, satisfying the patient's desire for a less intrusive procedure, and upholding the highest standards of care and results. In addition to surgical dexterity, the approach demands the integration of major technology improvements in patient care. Minimally invasive myocardial revascularization becomes even more important in an era where percutaneous procedures are frequently recommended under the guise of improved patient comfort and demand. The field of minimally invasive myocardial revascularization is always changing and includes both endoscopically aided and small-incision open treatments. The right patient selection is just as important to the procedure's success as the technology's learning curve and level of familiarity.

Keywords: Minimally Invasive Cardiac Surgery, or MICS, Coronary Artery Bypass Graft (CABG) Surgery MICS-CABG.

PPC 82

SGLT – 2 INHIBITORS ASSOCIATED GENOTOURINARY TRACT INFECTIONS IN TYPE 2 DIABETES MELLITUS PATIENTS: A PROSPECTIVE STUDY

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To study the incidence of genitourinary tract infections (GUTIs) associated with SGLT-2 inhibitors in diabetic population. This observational study has been conducted from November 2022 to April 2023 was aimed to investigate the clinical presentation and risk factors of GUTIs in patients with type 2 diabetes mellitus treated with SGLT-2 inhibitors. The study design was prospective observational approach, and data was collected over a period of six months. Participants were selected based on specific criteria, including those prescribed SGLT-2 inhibitors as antidiabetic medication in the endocrinology department. Follow-up visits or calls were done by asking simple questions to patients to monitor the incidence of GUTIs among study population. The overall ADRs observed in this study was 24% Urinary Tract Infection, and 14% Genitourinary tract infection. We observed that 65% of study participants did not experience any adverse drug reactions (ADRs) after using SGLT-2 inhibitors. Furthermore, male patients had a 21 % of UTIs when treated with SGLT-2 inhibitors and 18% in female counterparts. The mean time for the onset of first infection after administration of SGLT-2 inhibitors was calculated, it was found that approximately 3-4 months was the median time. We intended to prevent this infections following the administration of study drugs by providing appropriate patient counselling, with an 85% success rate. This study dwells on the finding that there is significantly decreased incidence of genitourinary tract infections associated with SGLT-2 inhibitors in our study population. We evaluated that there was 65 % of the participants with no adverse drug reaction after administration of study drugs. We found that there was higher incidence of UTIs in patients treated with dapagliflozin group compared to empagliflozin group. The findings from the study emphasize the need for increased vigilance and tailored preventive measures for patients using SGLT-2 inhibitors to manage the risk and incidence of genitourinary tract infections effectively.

Keywords: Dapagliflozin, Empagliflozin, SGLT2 inhibitors, Urinary Tract Infection, Incidence, median time, Genitourinary Tract Infection.

PPC 83

LEMIERRE SYNDROME: AN OVERLOOKED CONSEQUENCE OF SORE THROATS

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Lemierre syndrome is a rare but potentially life-threatening condition characterized by septic thrombophlebitis of the internal jugular vein, mostly caused by Fusobacterium necrophorum(80%). Lemierre syndrome typically develops 4-5 days following an episode of acute pharyngitis. The initial common symptoms are sore throat, neck mass and neck pain. Presentation with subsequent complications does not tend to occur until one to three weeks later. The incidence of Lemierre syndrome has reduced significantly due to the advent of antibiotics, now affecting between 0.6-2.3 per million people. Here we describe a case of a 46-year-old woman with no significant medical history presented with generalized neck swelling and fever. Despite seeking medical attention at multiple outpatient clinics for upper respiratory symptoms lasting 10 days, she only received symptomatic treatment for acute viral pharyngitis. A computed tomography (CT) scan of her neck revealed thrombophlebitis in the left internal jugular vein, and subsequent cultures indicated the presence of Klebsiella pneumoniae. The patient's oxygen saturation levels suddenly dropped, and the CT scan identified bilateral peripheral consolidation areas in both lungs, consistent with septic emboli. These findings were consistent with a diagnosis of Lemierre syndrome. The patient was treated with 2 weeks of intravenous piperacillin/tazobactam and vancomycin, as well as anticoagulation therapy using heparin, and her symptoms resolved completely. This report presents an unusual occurrence of Lemierre syndrome caused by K. pneumoniae, a less frequently encountered causative pathogen in patients without diabetes mellitus. The case highlights the significance of timely and appropriate antibiotic use to prevent potential complications.

Keywords: Lemierre syndrome, Klebsiella Pneumoniae, antibiotics, thrombophlebitis

PPC 84

EHLERS-DANLOS SYNDROME: ANALYSIS OF THE CURRENT TREATMENT OPTIONS

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Ehlers-Danlos syndrome (EDS) is a genetic or inherited disorder that affects connective tissue supporting the skin, bones, joints, blood vessels, many other organs & tissues. It disrupts collagen formation & function due to an altered gene, which can be inherited or occur spontaneously. EDSs are a heterogeneous group of heritable connective tissue disorders involving defective collagen synthesis & manifests as hyperelasticity of skin, hypermobility of joints, atrophic scarring, fragility of blood vessels, chronic pain, Bruising easily, Fatigue. Pain in EDS is multifaceted & often progresses from nociceptive to neuropathic pain with central sensitization. A retrospective cohort study of 98 EDS patients found that occupational therapy & bracing were most effective treatments, 70% of patients reporting improvement. In contrast, neuropathic modulators were less well tolerated, with 47% experiencing adverse effects. Although the initial pathology is commonly nociceptive, progression of EDS leads to neuropathies & central sensitization of pain signals. Over 90% EDS patients suffer from chronic pain & there are no existing guidelines for managing it .This study Review various treatment modalities, as physical therapy, occupational therapy, muscle relaxants, neuropathic modulators, steroids, surgery & acetaminophen. The purpose of this study was to investigate the currently available treatment modalities for patients with EDS and their efficacies in pain & symptom relief.

Keywords: Ehlers-Danlos syndrome, hypermobility, connective tissue, hyperelasticity, pain, genetic, physical therapy.

PPC 85

PHYTO CHEMICAL EVALUATION AND INVESTIGATION OF ANTICONVULSANT AND ANXIOLYTIC ACTIVITY OF METHANOLIC EXTRACT OF INDIGOFERA MYSORENSIS

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The demand for herbal drugs has increased due to their safety, efficacy, and cost- effectiveness compared to synthetic drugs, which often have therapeutic complications. Objectives: This study aimed to conduct preliminary phytochemical studies and evaluate the anxiolytic and anticonvulsant activities of the methanolic extract of Indigofera mysorensis. Pharmacological and acute toxicity studies were performed according to OECD-423 guidelines. No mortality or acute toxicity was observed up to 2000 mg/kg body weight. Preliminary phytochemical screening was conducted using various chemical tests. Anxiolytic activity was evaluated using the Elevated Plus Maze (EPM) test, Open Field Test, and Rota rod test. Anticonvulsant activity was evaluated using PTZ-induced convulsions and the maximal electroshock (MES) model. Preliminary phytochemical screening of the methanolic extract revealed the presence of carbohydrates, alkaloids, phytosteroids, flavonoids, phenolic compounds, and tannins. Mice treated with the extract showed a significant increase in open arm entries and time spent in the center, indicating anxiolytic properties. The extract significantly decreased locomotory scores and fall time from the rotating rod. It also exhibited dose-dependent protection in MES and PTZ- induced convulsions, increasing seizure latency and reducing seizure duration in unprotected animals. The effects are likely due to the enhancement of GABA response, facilitating the opening of GABA-activated chloride channels. The methanolic extract of Indigofera mysorensis possesses anxiolytic and anticonvulsant effects, supporting its ethnomedicinal use. Isolating active compounds from this plant may lead to the development of new drugs for managing nervous disorders.

Keywords: Phyto Chemical Evaluation, Anticonvulsant Activity, Anxiolytic Activity Methanolic Extract, Indigofera Mysorensis.

PPC 86

ISOBAVOCHALCONE,A NATURAL POLYPHENOLIC CHALCONE OF MORUS ALBA,PROTECTS AGAINST HIGH GLUCOSE INDUCED CARDIOMYOCYTE INJURY VIA AMPK ACTIVATION IN H9C2 CELLS

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This in-vivo study explored the impact of Morus alba methanolic leaf fraction on diabetic cardio myopathy in rats induced with alloxan-induced diabetes. The experiment comprised seven groups, including non-diabetic and diabetic rats treated with varying doses of M. alba extract, metformin, or a vehicle. The results showed that M. alba extract significantly reduced blood glucose levels compared to diabetic rats. Moreover, it led to a decrease in serum cholesterol, triglycerides, ALT, and AST levels, with an increase in LDL levels. The extract also exhibited antioxidant effects by reducing TBARS and enhancing SOD, catalase, and glutathione peroxidase activity. Furthermore, cardiac biomarkers like Malondialdehyde, lactate dehydrogenase, creatine kinase-MB, cardiac Troponin I, and Pro-BNP decreased significantly with M. alba treatment. Anti-inflammatory biomarkers C-reactive protein and TNF-α also decreased, indicating potential anti-inflammatory activity. HPLC analysis identified five distinct peaks in the M. alba extract, corresponding to known biomolecules like Caffeic acid, Myricetin, Quercetin, Apigenin, and Kaempferol, which contributed to its therapeutic effects. Structural characterization through MS/MS and NMR analysis validated these findings. Overall, the study suggests that M. alba methanolic leaf fraction holds promise in ameliorating diabetic cardiomyopathy by addressing redox imbalance and inflammation.

Keywords: Morus alba methanolic leaf, Anti-inflammatory biomarkers, HPLC analysis.

PPC 87

ANTIHYPERLIPIDEMIC AND HEPATOPROTECTIVE ACTIVITIES OF BENINCASA HISPIDA TRANSFEROSOMES IN HIGH FAT DIET INDUCED HYPERLIPIDEMIA IN RODENTS

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Benincasa hispida is an annual climbing plant, cucurbitaceae family, native to Asia and used for medicinal purposes in ancient traditions. In this study Benincasa hispida seeds used to investigate how their anti-hyperlipidemic properties influences hepatoprotective capabilities. Benincasa hispida seeds employed for maceration extraction technique using ethanol as a solvent. The obtained extract was formulated as a transferosomes, these are deformable nanovesicles that can administer through transdermal route, improves bioavailability and avoid substantial hepatic metabolism. After performing evaluation parameters like FTIR, particle size, zeta potential, drug content, entrapment efficiency for formulations, F6 found more effective. In this research, female albino wistar rats are given high-fat diet for 30 days to induce hyperlipidemia and examine the effect of transferosomes F6 for antihyperlipidemic activity in safeguarding the liver from hyperlipidemia. The transferosomes were introduced along with high fat diet at a two doses 200 mg/kg & 400 mg/kg in two routes of administration i.e: both oral and transdermal route. Rat liver tissue examined in the high-fat diet-induced model showed necrosis with inflammation, sinusoidal dilatation, and death of cell tissue in the periportal/centrilobular region. Considerably the transferosome F6 at 400 mg/kg enhanced HDL levels and reduces the lipid levels and liver enzymes where oral route has no impact on reducing lipid levels. The phytochemicals found in plant extracts are associated to their anti-hyperlipidemic and hepatoprotective properties, which mainly alter lipid peroxidation and/or related processes, might lend credence to the notion. It might shed light on its dual function as antihyperlipidemic and hepatoprotective treatment.

Keywords: Benincasa hispida, Cucurbitaceae, Transferosomes, High fat diet, Hyperlipidemia, Hepatoprotective activity.

PPC 88

COMPARATIVE ANTIOBESITY ACTIVITY OF PROBIOTICS WITH SHORT-CHAIN FATTY ACIDS (SCFAS) THROUGH GLP 1 AND PYY ACTIVITY IN HIGH FAT DIET INDUCES OBESITY IN RATS

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Microbiota which is present in the intestine produces SCFAs like Butyrate and Propionate through undigested fiber, which plays an important role in metabolic disorders, especially in obesity and type II diabetes.To compare the anti-obesity activity of probiotics with SCFAs through GLP-1 and PYY activity in high-fat diet-induced obesity in rats.Sprague Dawley rats weighing around 150-200g were selected and divided into several groups for the study and were fed a high-fat diet for 56 days to induce obesity. SCFAs like Butyrate, propionate (400mg/kg, P.O), and probiotics (108 CFU P.O) were administered to their respective groups continuously along with the HFD. Weekly once the animal's body weight, and daily food intake by the animal, and every 15 days once lipid profile, GLP, PYY, insulin, and leptin parameters were measured. At the end of the study, animals were sent to NIN for TOBEC to estimate fat accumulation and lean body weight, after the completion of the study blood was collected through retro orbital puncture for evaluation of biochemical parameters and animals were anaesthetized and sacrificed for organ isolation for histopathological studies. Administration of SCFAs along with Probiotics in HFD-induced obese rats for 56 days resulted in a significant reduction in body weight gain, food intake, fat accumulation, insulin, leptin, and lipids as compared with rats fed with HFD and standard. SCFAs along with probiotics effectively increase HDL levels and reduce LDL. Histopatholohy examination reveals that fat tissue accumulation was absent in treated groups when compared with only HFD feed group. Results show that SCFAs are showing significant reduction in lipid profile, food intake, body weight than probiotics treated group possess significant anti-obesity activity.

Keywords: Butyrate, Propionate, Probiotics, High-fat diet, obesity.

PPC 89

RARE DISEASES IN INDIA

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A rare disease is a health condition of low prevalence that affects a small number of people compared with other prevalent diseases in the general population. Most common rare disease includes: Duchenne muscular dystrophy, Pompe disease, Marfan syndrome, Gaucher syndrome. Policy for facilitating access to treatment for RD's has been prepared. National Health Mission (NHM) is one of the crucial programs initiated by the government of India to address the health needs of the under-served. Diagnosis of RD's may take up to several years, owing to difficulty in diagnostic modalities and lack of awareness among doctors. Many doctors lack appropriate training and awareness to be able to correctly and timely diagnose and treat these conditions. A fundamental challenge in research and development for the majority of RD's is that there is relatively little known about the pathophysiology or the natural history of these diseases. RD's are difficult to research upon as the patient pool is very small and it often results in adequate clinical experience. However, diagnosis and treatment of RDs is a complicated process that requires multisystem involvement and complex care by several healthcare providers. Thus, post-screening and identifying the potential cases, a more focused pathway is necessary for an exact diagnosis and treatment of RDs.

Keywords: Rare disease, NHM (National Health Mission), Lack of awareness, Multisystem involvement, Research and Development (R&D)

PPC 90

COMPARATIVE STUDY OF ANTHELMINTIC EFFECTS: MORINGA OLEIFERA, RAPHANUS SATIVUS, AND THEIR COMBINATIONS.

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Anthelmintics derived from plants offer a safe and non-toxic solution for parasitic infections by targeting modified sites of action. In this study, we assessed the anthelmintic effectiveness of crude hydroalcoholic herbal extract mixtures consisting of Moringa oleifera leaves and Raphanus sativus roots. We examined nine treatment groups: Group I as the normal control, Group II received a standard low dose (20 mg/ml albendazole), Group III received a standard high dose (40 mg/ml albendazole), Group IV as the vehicle control, while Groups V-VII were treated with mixtures (HEMA-C) containing different proportions of Moringa oleifera and Raphanus sativus (HEMA: 50%:50%, HEMB: 70%:30%, HEMC: 30%:70%). Additionally, Group VIII and Group IX received individual extracts of Moringa oleifera (HEMO) and Raphanus sativus (HERS) at a dose of 200 mg/kg. We conducted adult motility assays on mature Pheretima posthuma worms in 5 cm diameter glass petri dishes, with approximately 27 adult parasites used in each study and 3 parasites present in each group. Inhibition of worm motility served as an indicator of mortality or paralysis, confirmed by exposure to 50°C water. Worms displaying revived motility were considered alive, whereas those remaining motionless were classified as dead.

Keywords: Anthelmintics, herbal extract mixtures, albendazole, Pheretima posthuma, motility assays, mortality, paralysis.

PPC 91

A SYSTEMIC REVIEW ON ASSOCIATION OF ALCOHOL USE DISORDERS(AUD) AND PSYCHIATRIC MORBIDITIES AND THEIR TREATMENT MODALITIES

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The prevalence of the psychiatric disorders in Alcohol Use Disorder(AUD), the association between the severity of AUD and psychiatric disease, the influence of treatment of AUD on relief of psychiatric symptoms and vice-versa has been studied in various parts of the world .In India, the influence of various socio-economic factors and the life style of the individuals is different to other parts of the world. There is paucity of the literature regarding the association of AUD with psychiatric disease, influence of AUD on pharmacotherapy of psychiatric disorders, the quality of life of patients with co-existing AUD and psychiatric disorders. This review aims to study the association and co-occurrence of AUD and psychiatric disorders and influence of combined disorders on the treatment.

Keywords: Alcohol Use disorder, psychiatric morbities, socio-economy, QOL

PPC 92

EVALUATION OF CLINICAL OUTCOMES AND TOLERABILITY OF ORAL SEMAGLUTIDE IN OBESE PATIENTS: OBSERVATIONAL STUDY

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Obesity and diabetes mellitus (DM) are chronic diseases on the rise globally, necessitating innovative approaches to their management and prevention, especially in obese individuals at risk of diabetes. Overweight is defined by a BMI over 25 kg/m2 , while obesity is classified as a BMI over 30 kg/m2 for non-diabetic individuals and over 27 kg/m2 for diabetic patients. Obesity, characterized by excessive fat accumulation, poses significant health risks, with over 135 million individuals affected in India alone. According to the WHO, obesity contributes to 44% of diabetes cases, with projections indicating a doubling of obesity-related diabetes to 300 million by 2025.Oral semaglutide, the first oral GLP-1 receptor agonist approved by the U.S. FDA in September 2019, shows promise in improving glycemic control, beta-cell function, insulin sensitivity, and weight loss when used as an adjunct to diet and exercise in adults with type 2 DM. This study aims to investigate the clinical outcomes and tolerability of oral semaglutide in both diabetic and non-diabetic obese patients, addressing the lack of data on its use in the Indian clinical setting. It adopts a prospective observational single-center approach, focusing on assessing various anthropometric parameters such as BMI, waist circumference, waist/hip ratio, and biomarkers including serum creatinine, eGFR, HbA1c, FBS, PPBS, and lipid profile (LDL). Adverse drug effects will also be evaluated. Overall, this study has the potential to significantly enhance the management of obesity and its associated comorbidities, particularly within the Indian population, by providing real-world insights into the effectiveness and tolerability of oral semaglutide.

Keywords: Oral Semaglutide, Obesity, Diabetes Mellitus, Weightloss.

PPC 93

OPIOID CRISIS INTERVENTIONS: STRATEGIES FOR SAFER PRESCRIBING AND PATIENT EDUCATION

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The opioid crisis continues to be a significant public health challenge, driven by high rates of addiction, overdose, and deaths. Effective interventions for safer prescribing and patient education are critical to addressing this issue. Strategies for safer prescribing include implementing prescription drug monitoring programs (PDMPs), adhering to updated prescribing guidelines, and integrating multimodal pain management approaches. PDMPs help clinicians track patient prescriptions and identify potential misuse. Updated guidelines, such as those from the CDC, recommend cautious prescribing, emphasizing the lowest effective dose and duration. Non-opioid pain management techniques, including physical therapy and cognitive-behavioral therapy, provide alternative options to reduce opioid reliance.Patient education is equally crucial in mitigating the opioid crisis. Educating patients about the risks of opioid use, safe usage, storage, and disposal practices can prevent misuse and diversion. Additionally, informing patients about the signs of overdose and the availability of naloxone can save lives. Healthcare providers should engage in shared decision-making with patients, discussing the benefits and risks of opioid therapy and exploring non-opioid alternatives. Enhancing provider-patient communication and building trust can lead to better adherence to safer prescribing practices and patient education efforts.

Together, these strategies aim to reduce opioid misuse and its associated harms while ensuring effective pain management for patients. Comprehensive approaches involving prescribers, patients, and public health systems are essential for promoting safer opioid use.

Keywords: opioid crisis, patient education, patient communication, prescribing, PDMPs.

PPC 94

A CASE STUDY ON GASTRIC ECTOPIC PANCREAS

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The ectopic pancreas is a rare embryological abnormality not in association with others. The stomach and duodenum are the most common organs involved. Symptoms are nonspecific. Patients may complain of dyspepsia, abdominal pain, or intestinal obstruction. Diagnosis can be very challenging due to the rarity of the disease and the absence of specific symptoms and radiological findings. This is a case of Heterotopic pancreas in gastric tissue in a 23-year-old woman admitted to the emergency department due to acute upper gastrointestinal symptoms. Endoscopic ultrasonography revealed submucosal gastric lesions. The patient underwent abdominal computed tomography that showed gastric mass originating along the lesser curvature of the stomach. According to the patient's symptoms, family history, and radiological findings, the patient was scheduled for surgical resection. In this case, the ectopic gastric pancreas was found on routine histopathological examination. Clinical presentation of the ectopic pancreas can be challenging, especially in an emergency. Diagnostic-therapeutic laparoscopy should be considered in symptomatic patients.

Keywords: Ectopic Pancreas, Epigastric Pain, Pancreatitis, Gastritis, Endoscopic Ultrasonography.

PPC 95

EXACERBATION OF ANEMIA IN HEART FAILURE MANAGEMENT WITH VERICIGUAT: A CASE SERIES

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Heart failure with reduced ejection fraction (HFrEF) presents significant challenges in management, with limited therapeutic options. Tab. Vericiguat has emerged as a promising treatment adjunct, yet concerns persist regarding its adverse effects, particularly exacerbation of anemia. This abstract delves into the controlled range of anemia in HFrEF patients undergoing tab. vericiguat therapy, drawing insights from clinical observations. A retrospective analysis was conducted on a cohort of HFrEF patients treated with tab. vericiguat, focusing on changes in hemoglobin levels. Findings revealed a notable incidence of anemia exacerbation in patients with pre-existing anemia upon initiation of the tab. vericiguat therapy. This underscores the importance of close hemoglobin monitoring, especially in patients with underlying anemia, to manage treatment risks effectively. Understanding the controlled range of hemoglobin levels in this context is crucial for optimizing therapeutic benefits while minimizing adverse events. Clinicians must exercise caution in tab. vericiguat initiation, particularly in patients with baseline anemia, and tailor treatment strategies accordingly. This exploration emphasizes the need for further research to delineate optimal hemoglobin thresholds and refine management approaches in HFrEF patients receiving tab. vericiguat, ultimately enhancing treatment efficacy and patient safety. In conclusion, anemia exacerbation in heart failure patients treated with tab. vericiguat underscores the importance of vigilant hemoglobin monitoring, particularly in those with pre-existing anemia. Understanding the controlled range of hemoglobin levels is essential for optimizing therapy while minimizing adverse events, and guiding tailored treatment strategies for improved patient outcomes.

Keywords: Tab. vericiguat, anemia exacerbation, hemoglobin monitoring.

PPC 96

REPURPOSING OF ANTI VIRAL DRUGS FOR ANTI-DENGUE ACTIVITY

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This study employed structure-based molecular docking to repurpose both natural compounds and commercially available antiviral drugs for targeting dengue-related therapeutic sites, offering a novel approach to potential treatment options for the disease. To assess binding affinity, structure-based virtual screening employing Auto Dock Tools 1.5.7 and Easy Dock Vina 2.0 was performed. Furthermore, interacting amino acids were compared using PDB sum and visually inspected the results in a pictorial database. In addition, ADME (Absorption, Distribution, Metabolism, and Excretion) studies were performed on the identified natural peptides using Swiss ADME, providing comprehensive insights into their potential as drug candidates. In the study, natural marine peptides, and existing drugs (ribavirin, lamivudine, adefovir) were explored for repurposing as potential anti- dengue agents. Their docking scores, spanning from -7.6 kcal/mol to -4.4 kcal/mol, indicate their potential effectiveness in combating the disease. In the study, the drugs demonstrated effective binding to the specific dengue proteins, indicating their potential utility for in-depth examination of the disease. This promising affinity suggests they can be further assessed through in vitro and in vivo studies to evaluate their therapeutic potential for treating dengue. The repurposed ligands identified here show promise as potential candidates for testing their anti-dengue properties. Utilizing structure- based docking simulations through cost-effective freeware offers an efficient approach to identify potential anti-dengue drugs, making this strategy both effective and economically viable for drug discovery.

Keywords: Repurposing, Easy Dock Vina, Molecular Docking. Swiss ADME, Auto Dock Tools.

PPC 97

EFFICACY OF METADOXINE IN AMELIORATING ACECLOFENAC INDUCED HEPATOTOXICITY IN WISTAR RATS

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The liver is essential for drug metabolism and detoxification processes. However, it is also susceptible to potential toxicities associated with certain medications. Aceclofenac (NSAID) commonly used to relieve pain and inflammation. Long-term administration of Aceclofenac may leads to hepatotoxicity. Metadoxine is a drug used to treat chronic and acute alcohol intoxication and it protects the liver from damage. The present study was aimed to evaluate the protective effect of Metadoxine on Aceclofenac induced hepatotoxicity. The study was performed on male Wistar rats weighing 200 to 250 g and dividing into five groups. Aceclofenac (15 mg/kg), Metadoxine (100 and 200 mg/kg), and N-acetyl cysteine (100 mg/kg) were given orally for 28 days. AST, ALT, ALP, and lipid profile were determined to evaluate the extent of hepatotoxicity due to Aceclofenac and its protection by Metadoxine. Administration of Aceclofenac alone resulted in a statistically significant decrease in liver wet weight and size compared to the other groups. Furthermore, a significant increase in serum levels of AST, ALT, and ALP was observed in the Aceclofenac-treated group, which confirms liver injury. In the metadoxine-treated groups, these parameters were not significantly changed when compared to the control group. Conversely, the aceclofenac-treated group exhibited elevated triglycerides, LDL, and VLDL levels, alongside a decrease in HDL. Metadoxine, similar to NAC treatment, maintained a normal lipid profile, potentially supporting its protective efficacy against aceclofenac-mediated hepatotoxicity.

The study concludes that Metadoxine has shown a protective effect against aceclofenac-induced liver injury in rats.

Keywords: Aceclofenac, metadoxine, ALT, liver wet weight.

PPC 98

RENOPROTECTIVE EFFECT OF SELECTED MEDICINAL PLANTS AGAINST STREPTOZOTOCIN AND NICOTINAMIDE INDUCED DIABETIC NEPHROPATHY IN RATS AND ITS ROLE ON TARGETING ADVANCED GLYCATED END PRODUCTS AND OXIDATIVE STRESS

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Renal disease in diabetes is one of the most common micro-vascular complications of Diabetes mellitus implicated in end stage renal failure. This study was designed to explore the renoprotective effect of Tephrosia aequilata (TA) and Syzygium cumini (SC) against streptozotocin and nicotinamide induced diabetic nephropathy in rats and its role on targeting advanced glycated end products and oxidative stress. Methalnolic leaves extracts of TA and SC showed the presence of alkaloids, saponins, flavonoids, tannins, terpenoids, steroids, cardiac glycosides. Also conducted in-vitro anti-oxidant activity (DPPH, Nitric oxide radical scavenging Assay) and in-vitro anti-diabetic activity (α-Glucosidase, α-amylase inhibitory assay), which showed dose dependent % inhibition. By performing the quantitative analysis (total flavonoid and phenolic content) of methanolic extracts, TA and SC showed high TPC and TFC. In-vivo Diabetic nephropathy was induced by streptozotocin (55mg/kg b.w., i.p.) and nicotinamide (100 mg/Kg b.w, i.p). Diabetic nephropathy was assessed by measuring serum glucose, renal parameters (uric acid, urea, creatinine, and blood urea nitrogen level) and lipid profile. The rats were treated with different doses of extracts (100 mg/kg, 200 mg/kg, and 400 mg/kg) for 45 days. Oxidative stress were determined by measuring tissue antioxidant enzymes level along with the formation of advanced glycation end-products (AGEs) in kidney. TA and SC (400 mg/kg) produced significant attenuation in the serum glucose level as compared to control. Elevated renal parameters, lipid levels, tissue antioxidant enzymes and AGE formation were also restored in a dose dependent manner. These findings suggest that by amelioration of oxidative stress and formation of AGEs, TA and SC significantly inhibited the progression of diabetic nephropathy in rats.

Keywords: Diabetic Nephropathy, Tephrosia aequilata, Syzygium cumini, Streptozotocin and Nicotinamide.

PPC 99

NEUROPROTECTIVE EFFECT OF NANOEMULSION OF CUCUMIS SEED OIL IN RODENT MODELS

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Preparations of products containing herbal extracts have grown by leaps and bounds, hitting the pharmaceutical industries due to the natural healing approach.Cucumis melo which is commonly known as musk melon belongs to the family Cucurbitaceae.It contains various phytoconstituents, which plays a vital role in the treatment of various illness. Oil and NEs were determined to be safe up to 2000 mg/kg body weight in an acute toxicityassessment.In vitro antioxidant activity was done by using hydroxyl radical scavenging and reducing power assays and showed that oil effectively scavenged unstable radicals in a dose-dependent way. In the Maximal Electroshock Induced seizures, the duration of flexion as well as extension was dramatically reduced by the oil, F2, and F3 at 400mg/kg. In rotarod test it does not cause any motor incoordination. In comparison to the control group, the number of marbles buried in the treated groups was dramatically reduced by the oil and formulations. The antiepileptic and anxiolytic effects of the seed oil may be attributed to the presence of phytosterols and triterpenoids. Through the modulation of GABAergic neurotransmission and/or associated pathways, phytosterols and triterpenoids may selectively operate to support this hypothesis. This could assist to clarify why they have both anticonvulsant and anxiolytic properties. The results of the research imply that cold-pressed Cucumis melo seed oil and its O/W type F2 and F3 nanoemulsions have anxiolytic and anticonvulsant properties in rodents.

Keywords: Cucumis melo, nano emulsion, seed oil, anticonvulsant and antianxiety activity

PPC 100

EFFECT OF NETTLE ROOT EXTRACT (Urtica-dioica) ON BENIGN PROSTATIC HYPERPLASIA: AN EXPERIMENTAL STUDY

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Benign prostatic hyperplasia (BPH) is an enlarged prostate gland. BPH is also known as benign prostatic hypertrophy. An enlarged prostate can be a nuisance. As the prostate gets bigger, it may squeeze or partly block the urethra. This often causes problems with urinating. To evaluate the effect of Nettle Root Extract on Benign Prostatic Hyperplasia (BPH) in Rats. To evaluate combined effect of Nettle Root Extract and Standard on BPH.All the animals were divided into 7 Experimental Groups of six rats in each. Testosterone (10 mg/kg I.M.) dissolved in Arachis Oil was administered to induce the BPH. BPH was induced by testosterone once daily for 28 days, on 29th day confirmation of BPH was done by taking body & prostate weight and hormonal profile. Treatment with finasteride (10 mg/kg) as a std., nettle root extract as a test (Aqueous extract as Test 1 and Alcoholic extract as Test 2) and in combination with sub-effective were given for 28 days post induction, after treatment on 57th day body & prostate weight and hormonal parameters were estimated. Finasteride and Alcoholic Nettle Root Extract alone and in combination showed significant decrease in body weight, prostate weight, testosterone level, PSA level and significant increase in prolactin level as compared to the control group. Consequently, it can be concluded that the Nettle Root Extract could be considered as a better alternative to allopathic treatment and surgery.

Keywords: Benign Prostatic Hyperplasia, Testosterone, Finasteride, Prostate weight, PSA level, Prolactin level.

PPC 101

FLAVONOIDS IN TREATMENT OF CONGESTIVE HEART FAILURE: A NEW APPROACH.

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Flavonoids are the class of drugs obtained from the natural sources such as plant parts like bark, fruits, flowers, leaves, mint, roots, grains etc.These are polyphenolic secondary metabolites with polyphenolicstructres. Flavonoids are the natural substances found in plants and also in human diet as they are beneficial for human health. Flavonoids are the isolated product which are used in the treatment of various diseases like congestive heart failure(CHF),cancer and also used in the treatment of pain. These flavonoids has variety of medicinal and cosmetic applications like these flavonoids are used as anti-carcinogen, anti-mutagenicanti-oxidative and also it has anti-inflammatory properties. These flavonoids also help in the growth of the plants known as Growth Regulators. In the Pharmaceutical industry flavonoids are obtained by using microbial biotechnology .

Keywords: Anti inflammatory, Flavonoids, Biological activity, pain management

PPC 102

CAM ASSAY: AN ALTERNATE ANIMAL MODEL FOR CANCER INVASION AND METASTASIS

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Chick chorioallantoic membrane (CAM) assay is a popular in vivo model of cancer that is frequently utilized in scientific studies. The chicken chorioallantoic membrane (CAM) assay has been rediscovered in the past ten years in cancer research to examine the molecular mechanisms underlying the effects of anti-cancer drugs. The

CAM membrane surrounding the chicken embryo inside the fertilized egg is replaced in this model by transplanted human cancer cells. Three days later, a highly vascularized tumour with extracellular matrix, several cell types, and other characteristics of human tumour`s forms. In contrast to cancer cell-derived models like tumour organoids, a tumour that forms in chicken eggs has characteristics similar to those of a tumour microenvironment. Therefore, the CAM model offers an alternate test system that may be used to easily and inexpensively investigate angiogenesis, medication response, and tumour progression in vivo. As a sort of pre-orientation and strategic refinement for future necessary trials, it satisfies the 3R principle for a reduction in animal experiments. The meticulous assessment of CAM xenografts yields firstly valuable insights into the targeted cellular activities of particular gene knockouts or pharmacological treatments, enabling the formulation of hypotheses and the planning of additional appropriate strategies. Recently, a new era for the CAM model in immune-oncology-based drug discovery has been opened up. Although there are many advantages offering extraordinary and unique applications in cancer research, it has also its disadvantages and limitations.

Keywords: CAM, embryonated eggs, human cancer cells.

PPC 103

DAPSONE-INDUCED DRESS SYNDROME WITH ACUTE LIVER FAILURE IN A YOUNG BOY: A RARE BUT DEADLY THREAT

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Drug reaction with eosinophilia and systemic symptoms (DRESS) syndrome is a severe, delayed-onset adverse drug reaction characterized by fever, rash, lymphadenopathy, and multi-organ involvement. Dapsone, an antibiotic commonly used to treat dermatological conditions, can rarely cause DRESS syndrome.A 10-year-old boy presented with prurigo and was prescribed dapsone 100mg, methylprednisolone, and anti-itch ointment. After 33 days of treatment, he developed fever, generalized edema, jaundice, and pruritus. Laboratory investigations revealed elevated total bilirubin (20.9 mg/dL), AST (1178 IU/L), and ALT (809 IU/L), consistent with acute drug-induced liver injury. He was diagnosed with dapsone-induced DRESS syndrome complicated by acute liver failure and hepatic encephalopathy. Despite supportive treatment with IV albumin, antibiotics, N-acetylcysteine, and cold sponging, his liver function tests continued to worsen. After preoperative evaluation and optimization, he underwent a successful liver transplant on day 19 of hospitalization. The patient's postoperative course was uneventful, and he was discharged on day 49 with resolving skin lesions and improving hepatic parameters.This case highlights the importance of recognizing dapsone as a potential cause of DRESS syndrome, which can rapidly progress to life-threatening complications like acute liver failure. Early recognition, prompt discontinuation of the offending drug, and supportive care are crucial to prevent morbidity and mortality. In severe cases with multi-organ involvement, liver transplantation may be necessary.Dapsone-induced DRESS syndrome is a rare but serious adverse reaction that requires prompt diagnosis and management to prevent potentially fatal outcomes. This case emphasizes the need for vigilance when prescribing dapsone and the importance of close monitoring for early signs of DRESS syndrome.

PPC 104

A PROSPECTIVE OBSERVATIONAL STUDY ON PREVALENCE AND MANAGEMENT OF HEPATITIS AT A TERTIARY CARE TEACHING HOSPITAL

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To Study the Prevalence and Management of Hepatitis in the General Medicine Department at a Tertiary Care Teaching Hospital.It's a prospective and observational study carried out over a period of six months in department of general medicine at Osmania General Hospital , Afzal Gunj, Hyderabad. Patients over a age of 18 years and above were selected for the study. A total of 100 cases were collected using a predesigned data collection form and data was evaluated to study the prevalence and management of hepatitis.There is a

predominance of hepatitis in male i.e (86) patients in the study population with 46.51%. The most prevalent type of hepatitis among females is viral hepatitis (28.5%)and the least prevalent is hepatitis B (7.14%) based on prevalence. The patient distribution based on symptoms include Jaundice (18%). The commonly prescribed drug therapy for hepatitis were Ceftriaxone, Pantaprazole, Metronidazole, Furosemide, Ampicillin, L-Ornithine L-Aspartate and Meropenam.In the present study 100 cases of hepatitis are recorded in a period of six months and there is predominance of Alcoholic Hepatitis in male which mark the highest occurred disease among different types of hepatitis with a total number of 42 cases. Majority of the cases were recorded in patients with a age group of below (41-50) years of age. The risk factors that include are smoking, alcohol abuse , use of herbal medications and weak immune system . The main treatment regimen that can be prescribed to the patients were Anti-viral drugs and vaccinations which can be more beneficial to the patient and helps in fast recovery of viral hepatitis.

Keywords : Hepatitis , Hepatitis B surface antigen , Hepatocellular carcinoma, Chronic hepatitis B, End stage liver disease, Liver transplantion.

PPC 105
MAGNETO-ELECTRIC NANOPARTICLES IN ANTI-CANCER THERAPY

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A Nanomedicine ia a promising application of nanotechnology that includes the use of drug therapy carrying nanoparticles to uniquely target diseased cells. Consequently traditional cancer therapies attack not only cancer cells but also healthy cells which often results in serious side effects. Targeted drug delivery has the potential to minimize if not eliminate dangerous side effects and enable patients to be treated with shorter, more concentrated drug protocols. Magneto-electric nanoparticles(MEN's) based drug delivery system offer a novel approach in the eradication of tumour. This technology is capable of high specificity targeted delivery of antineoplastic drugs would be significant breakthrough in cancer. MEN's can be directed through the body including across blood brain barrier(BBB) and manipulated to preferentially penetrate diseased tumour cells before releasing their drugs. MEN's have a magnetic core surrounded by piezoelectric shell preferentially target cancer cells by creating localized changes in the permeability of the cells phenomena called as electroporation and are therefore more permeable when exposed to an electric field. This electric field inturn induces the nano electroporation of the cancer cells. Once the MEN's are inside the cancer cells, an alternating magnetic field induced by a coil can shift the magnetic dipole of the particle and shake off the drug. The drug thus is released intracellularly sparing the healthy cells from the toxic cancer therapy. These magnetic nanocarriers also allow us to track the the location of the therapeutic agent, continuously control the therapeutic agent, continuously control the therapeutuc process and eventually assess the efficacy of the treatment. In the conclusion, the use of MEN's as an effective drug delivery carrier is supported in the cancer therapy.

Keywords: Nanotechnology, cancer therapy, Magneto-electric nanoparticles(MEN's), targeted drug delivery system, electroporation , magnetic field, magnetic nanocarriers.

PPC 106

EFFECT OF POLYHERBAL FORMULATION ACTIFEM ON PCOS: AN EXPERIMENTAL RAT MODEL

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This research is to assess the impact of Actifem, a polyherbal blend, on polycystic ovarian syndrome (PCOS) in rats induced by letrozole. Thirty female albino Wistar rats were divided into five groups: normal, PCOS control, standard treated with clomiphene citrate, and two treatment groups receiving different doses of Actifem. PCOS was induced by letrozole for 21 days, followed by Actifem for 15 days. Actifem, Letrozole (Letroz®), and Clomiphene citrate (Fertomid 25®) were used. Female albino Wistar rats were obtained from the Institute of Pharmaceutical Education and Research's animal house. Body weight, biochemical parameters, hormone levels, and histopathology of ovarian tissues were assessed. Data were analysed using Graph Pad Prism-5, employing two-way ANOVA with Bonferroni post-test ($P < 0.05$).The lipid profile indicators, including total cholesterol (TC) (**$P<0.01$) and low-density lipoprotein (LDL) (**$P<0.01$), were significantly reduced, and serum levels of testosterone (**$P<0.01$) and estradiol (**$P<0.01$), were restored in the groups that received treatment with the polyherbal formulation, Actifem. Additionally, the groups showed maintenance of body weight (**$P<0.01$) and increased level of HDL (**$P<0.01$). Sections of rat ovaries treated with Actifem showed the presence of oocytes, healthy follicles at different developmental stages, and no cysts, according to histopathological analysis. A polyherbal supplement, Actifem helped people lose weight, regulate their cholesterol levels, and balance their hormone levels. Actifem's capacity to lower cyst count, encourage healthy follicle development, and aid in corpus luteum production. Hence, Actifem may be used for the management of PCOS with little to no adverse effects.

Keywords: PCOS, Actifem

PPC 107

THERAPEUTIC EVALUATION OF TRIDAX PROCUMBENS GEL FOR ANALGESIC AND ANTI-INFLAMMATORY ACTIVITY

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Medicinal plants hold a significant place as alternative treatments available for inflammatory diseases. In the current study, we investigated the in vivo anti-inflammatory properties of Ethanolic extract of Tridax procumbens (EETP) which is formulated as a gel at semi-solid dosage form using carbopol as a base in combination with triethanolamine.The gel formulation was evaluated for its properties like spreadability, colour, pH, and appearance. Invitro antioxidant studies like hydrogen peroxide radical scavenging assay,&superoxide radical scavenging, was performed to determine the antioxidant capacity. Preliminary phytochemical investigation and GC-MSstudies resulted in the presence of alkaloids, flavonoids, tannins, phenols, lignins, and sterols. The free radicals were scavenged by the EETP extract in a dose-dependent manner. Using OECD guidelines, acute oral toxicity tests were performed and the doses selected were 200 mg/kg & 400 mg/kg. EETP shows significant difference with standard indomethacin. In cold water tail flick test the substantial increase in the time latency by increasing the time intervals and in writhing test EETP showed reduced no of writhes as the time increases. In acetic acid induced vascular permeability it resulted in the inhibition of dye leakage. Anti-lipoxygenase activity shows the strongest inhibition that shows a potential anti-inflammatory activity. Consequently, we can imply that the active constituents present in vivo anti-inflammatory properties, and the prepared gel may be suited for use as an alternative treatment of topical inflammatory conditions.

Keywords: Indomethacin, Tridax procumbens, Acetic acid, Carbopol, Triethanolamine, Analgesic activity, Anti-inflammatory activity.

PPC 108

ASSESSMENT OF POTENTIAL ANTIUROLITHIATIC PROPERTY OF CARISSA CARANDAS LINN. LEAVES BY IN-VITRO STUDIES

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Urolithiasis is a typical urinary disorder that indicates calculi emanating at any place in the renal system, comprising the kidney and bladder, which has been noticed and reported by Greek and Roman physicians in medical literature. Since bygone times, diverse herbal structures have been utilized in therapy of urolithiasis. It is the third most common urological condition, caused by amalgamation of dietary, regional, biochemical and genetic risk factors accountable for profound human being affliction and price to public with a great reoccurrence percentage. The habituated procedures for dislodging urinary stones are auxiliary with the imperil of urgent urinary failure and augment in calculi reoccurrence which denote emergency requisite for proxy remedy. Many indigenous Indian plants have been discovered to be effective in the treatment of urolithiasis. In this regard the medicinal herbs Carissa carandas Linn. was chosen for the investigation. In vitro anti-urolithiatic activity of EELCC in the current research was explored by nucleation assay, aggregation assay, calcium oxalate (CaOx) crystallization method, growth assay and dissolution method. The results of the in vitro studies clearly concluded that the EELCC possess good anti-urolithiatic activity. The EELCC possessed greater inhibition of nucleation, aggregation, calcium oxalate CaOx crystallization, growth and boosting the dissolution rate of calcium oxalate crystals. The IC 50 and dissolution rate of both EELCC and Cystone at a concentration of 1000 and 100 (dissolution method) μg/mL were almost in similar range. Comparatively EELCC has shown most promising effect of anti-urolithiatic activity at a concentration of 1000 and 100 (dissolution method) μg/mL.

Keywords: Calcium oxalate, Cystone, Urolithiasis, Dissolution method.

PPC 109

MULTI-DRUG RESISTANCE 'SUPERBUGS': A GLOBAL THREAT IN HEALTH CARE SYSTEM

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The rapid spread and dissemination of the multidrug-resistant bacteria worldwide represents a major public health problem. The development of antibiotics decreased the mortality among the human and animals leading to a better life expectancy. But the injudicious use of antimicrobials and selection pressure the microbes have developed resistance which became more prominent during last few decades. With the evolution of Methicilin-resistant Staphylococcus aureus (MRSA), Hospital-acquired MRSA, Community acquired MRSA and MDR TB (Multidrug resistant tuberculosis) challenge for the clinicians have increased to a greater extent. The global emergence and dissemination of acquired carbapenemases among gram negative bacteria are considered a major public health problem. Gram-negative bacteria, most notably Escherichia coli, Klebsiella pneumoniae , Pseudomonas aeruginosa , and Acinetobacter baumannii , are among the most important causes of serious hospital-acquired and community-onset bacterial infections in humans, and resistance to antimicrobial agents in these bacteria has become an increasingly relevant problem. Recent development in nanotechnology based drug delivery system may prove to be solution for combating these resistant bacteria. However policies and regulations for antibiotic use should be formulated to control the further development of resistance among the microbes. Although there is a lot of talk about antibiotic resistance in the future, it is important to realise that we are already seeing the impact of resistance infections in every day life. For example, many urinary tract infections are becoming resistant, which can lead to people requiring a hospital stay. It is inconceivable to think that by 2050 as many people are predicted to die of drug resistant infections as cancer, if antimicrobial resistance (AMR) is not tackled now. In this review we emphasized the microorganisms primarily reported of being resistance, referred as ESKAPE pathogens (Enterococcus faecium, Staphylococcus aureus, Klebsiella pneumoniae, Acinetobacter baumanii, Pseudomonas aeruginosa, and Enterobacteriaceae) accentuating their capacity to “escape” from routine antimicrobial regimes and steps taken by Central Drugs Standard Control Organisation (CDSCO) to curb and control indiscriminate use of antibiotics.

Keywords: Resistant Bacteria, MRSA, Antimicrobial, misuse, Stewardship, CDSCO.

PPC 110

CLINICAL XENOTRANSPLANTATION: PAST, PRESENT AND FUTURE

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Between the 17th and 20th centuries, blood was transfused from various animal species into patients with a variety of pathological conditions. In the 1920s, Voronoff advocated the transplantation of slices of chimpanzee testis into elderly men, believing that the hormones produced by the testis would rejuvenate his patients. Xeno is the Greek for strange or foreign. Xenotransplantation involves any procedure involving the transplantation, implantation or infusion of cells, tissues or organs from non-human animals into the human body. Xenotransplantation, specifically the transplantation of organs and cells from genetically engineered animals, could resolve this problem. Diabetic monkeys have remained normoglycemic and insulin—independent after pig islet transplantation for greater than one year, With these encouraging results, why is it that, with some notable exceptions, research into xenotransplantation has received relatively little support by industry, government funding agencies, and medical charitable foundations. It has only been the willingness of living donors to provide organs that has significantly increased the number of transplants being performed worldwide. Although with the best of intentions, we are therefore traversing the Hippocratic Oath of doctors to "do no harm." On January 7, 2022, Dr Bartley Griffith and his team at the University of Maryland Medical Center performed the first successful orthotopic heart xenotransplantation from a genetically modified pig into a 57-year-old man, the patient was alive and progressing in his postoperative course. This moment represents a culmination of centuries of ideas leading to experiments and scientific advances to overcome the barriers of xenotransplantation, with the hope to usher in a new era of transplant medicine.

Keywords: Xenotransplantation , genetically engineered animals , monkeys , research , hippocratic oath

PPC 111

BENEFICIAL EFFECTS WITH ACETONIC EXTRACT OF PUNICA GRANATUM WHOLE FRUIT ON ESTRADIOL VALERATE INDUCED POLYCYSTIC OVARIAN ACTIVITY

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Polycystic ovarian syndrome is reproductive, metabolic diseases affecting globally and associated with poor outcomes. The aim of this present study is to screen the acetonic whole fruit extract of Punica granatum for treatment of polycystic ovarian potential activity using the estradiol valerate induced polycystic ovarian syndrome. The GC-MS and preliminary phytochemical screening revealed the presence of terpenoids, flavonoids, sterols, phenols, tannins, and anthocyanins. The acetonic whole fruit extract of Punica granatum regulated the estrous cycle and maintained optimum body weight in estradiol valerate induced PCOS models with Clomiphene citrate as standard. The extract at a dose of 200 mg/kg and 400 mg/kg showed significant decreased in both absolute and relative weight of ovarian and uterus. The extract at a dose of 200 mg/kg and 400 mg/kg, and standard Clomiphene citrate showed significant decrease in levels of cholesterol, Triglycerides, LDL, and VLDL and significant increased HDL level in serum when compare to disease control. Histopathological reports in both estradiol valerate induced polycystic ovarian syndrome models revealed a decline of cysts in ovaries and enhanced corpus luteum in groups treated with the test extract and standard. The extract's ability to treat polycystic ovarian syndrome may be due to the flavonoids, sterols, phenols, tannins and anthocyanins present. From the above, it is clearly evident that the extract decreases the symptoms of polycystic ovarian syndrome.

Keywords: Punica granatum, estradiol valerate and polycystic ovarian syndrome

PPC 112
INSIGHT STUDIES ON EMPAGLIFLOZIN: A REVIEW

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Pharmacovigilance is an important exercise for monitoring of drug related issues after marketed in real world setting. The evolution of pharmacovigilance in recent years has growing importance as a science critical to effective clinical practice and public health science. Pharmacovigilance has been confined, mainly to detect adverse drug events that were previously either unknown or poorly understood. Communicating with patients about their experiences, needs and concerns regarding their health and medication is essential to identify drug related problems such as overuse, adverse drug reactions and non-adherence. Such communication is an important part of pharmaceutical care which urges pharmacists to take responsibility for the clinical outcomes of drug therapy by preventing, identifying and resolving drug related problems. Empagliflozin is a relatively new drug that, as an inhibitor of the sodium–glucose co-transporter 2 (SGLT2), causes increased urinary glucose excretion and thus contributes to improved glycemic control, better glucose metabolism, reduced glucotoxicity and insulin resistance. Empagliflozin has been shown to reduce hospitalizations for HF and the number of deaths from cardiovascular causes. Empagliflozin appears to be a fairly well-tolerated and safe drug.

Keywords: Pharmaceutical care, Communication, Health Professionals, Empagliflozin, Pharmacovigilance.

PPC 113
A SYSTEMATIC REVIEW STUDY ON KERATOCONUS

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Keratoconus is a bilateral and asymmetric disease which results in progressive thinning and steeping of the cornea leading to irregular astigmatism and decreased visual acuity. Traditionally, the condition has been described as a non-inflammatory disease; however, more recently it has been associated with ocular inflammation. Keratoconus normally develops in the second and third decades of life and progresses until the fourth decade. The condition affects all ethnicities and both sexes. The prevalence and incidence rates of keratoconus have been estimated to be between 0.2 and 4,790 per 100,000 persons and 1.5 and 25 cases per 100,000 persons/year, respectively, with highest rates typically occurring in 20- to 30-year-olds and Middle Eastern and Asian ethnicities. Progressive stromal thinning, rupture of the anterior limiting membrane, and subsequent ectasia of the central/paracentral cornea are the most commonly observed histopathological findings. A family history of keratoconus, eye rubbing, eczema, asthma, and allergy are risk factors for developing keratoconus. Detecting keratoconus in its earliest stages remains a challenge. Corneal topography is the primary diagnostic tool for keratoconus detection. Keratoconus severity and progression may be classified based on morphological features and disease evolution, ocular signs, and index-based systems. Keratoconus treatment varies depending on disease severity and progression. Mild cases are typically treated with spectacles, moderate cases with contact lenses, while severe cases that cannot be managed with scleral contact lenses may require corneal surgery. Mild to moderate cases of progressive keratoconus may also be treated surgically, most commonly with corneal crosslinking.

Keywords: Epidemiology, Detection, Classification, Histopathology, Etiology, Management.

PPC 114

EVALUATING ANTIHYPERTENSIVE THERAPY: CLINICAL COMPLICATIONS AND PRESCRIBING TRENDS IN HEMODIALYSIS PATIENTS – A PROSPECTIVE OBSERVATIONAL STUDY

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The study is to identify the clinical complications, underlying causes in hemodialysis patients, prescribing patterns of antihypertensive medications. The findings aim to inform targeted and effective approaches to patient care in specific medical context. To assess clinical complications, identify causes of hemodialysis and evaluate prescribing patterns of antihypertensive which are prescribed to hemodialysis patients. A prospective observational study was conducted on patients (n = 70) on hemodialysis for 6 months in dialysis unit. The data was collected regarding demographic details, laboratory data, vitals, causes, complications, diagnosis and treatment from Malla Reddy Narayana Multi Specialty Hospital. In our study, it was found that majority of age group on hemodialysis were of 41-55 years and number of males were highest compared to females. Most of patients are under hemodialysis with major cause of hypertension followed by hypertension with diabetes mellitus, hypothyroidism, long term use of analgesics and others. The major complications are insomnia, dyspnea followed by hypertension, depression, blurred vision, palpitations and oligomenorrhea. Amlodipine is most preferred antihypertensive drug in hemodialysis patients. By analyzing findings of our study, we conclude that majority of patients are affected with chronic kidney disease compared to end stage renal failure and reported complications are blurred vision, oligomenorrhea and palpitations. Early diagnosis, management may prevent complications of disease. It is important to create awareness about causes, complications in hemodialysis patients and reduce harm of chronic kidney disease, end stage renal disease.

Keywords: Dialysis- Hypertension-Antihypertensive- Chronic kidney disease- End stage renal disease.

PPC 115

IN-VITRO AND IN-VIVO HEPATOPROTECTIVE ACTIVITY OF BIOACTIVE FRACTION OF LUDWEGIA HYSSOPIFOLIA AGAINST ETHANOL INDUCED HEPATOTOXICITY

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Among the several degenerative diseases, liver disorders have become one of the serious health troubles worldwide. In the absence of reliable hepatoprotective drug in this current modern system of medicine, traditional herbal medicine has begun to gain its popularity worldwide. The objective of the study is to evaluate the in-vitro and in-vivo hepatoprotective activity of fractions of methanolic extract of Ludwigia hyssopifolia (LHME) against ethanol induced oxidative damage in HepG2 cell lines and Wistar rats respectively. Results: The in-vitro hepatoprotective activity of different fractions of the extract, LHME, was assessed by estimating the cell supernatant for hepato specific parameters viz., Alanine aminotransferase (ALT), Lactate dehydrogenase (LDH) and aspartate aminotransferase (AST) while the in-vivo hepatoprotective activity of the fractions of methanolic extract, LHME, was estimated on the basis of enhancement in the varied level of various serum biochemical parameters and in the alterations occurred in the histology of liver of the rats. The most effective fraction was evaluated for its in-vivo anti-inflammatory activity against Carrageenan induced inflammation in rats. Among all the fractions of LHME, butanol fraction of LHME (BF-LHME) at 50 μg/kg and 100 mg/kg were found to be the effective doses in in-vitro and in-vivo hepatoprotective methods respectively. Conclusion: The methanolic extract fractions of LHME, exhibited significant ($p < 0.01$) hepatoprotective activity in both in-vitro and in-vivo models, which may be attributed to its anti-inflammatory activity and antioxidant property revealed in both in-vitro and in-vivo studies.

Keywords: Carrageenan, Cytotoxicity, Ludwigia hyssopifolia, HepG2.

PPC 116
NANOMEDICINE: INNOVATIVE DRUG DELIVER SYSTEM

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Nano medicine refers to the application of nanotechnology in the field of medicine. It involves the use of nanoscale materials, such as nanoparticle, Nano robots, or Nano sensors, for diagnosing, treating and preventing diseases. Targeted drug delivery systems aim to deliver medications or therapeutic agents to specific locations within the body, such as tumours or diseased tissues, while minimizing the exposure of healthy tissues to the body. Nano medicine includes ; Enhanced drug delivery:- Nano particles can be engineered to encapsulate drugs and deliver them to specific cell or tissues, Selective targeting:- targeted drug delivery systems can be designed recognize and bind specifically to the target cells or tissues, Imaging & diagnostic:- Nano particles can be utilized as imaging agents to improve disease detection and monitoring. These Nano medicine can improve drug bioavailability and drug absorption time, reduce release time, eliminate drug aggregation and enhance drug solubility in the blood.

Keywords: nanotechnology, nanoparticles, targeted drug delivery, disease detection.

PPC 117
PHYTO CHEMICAL EVALUATION AND INVESTIGATION OF ANXIOLYTIC ACTIVITY OF METHANOLIC EXTRACT OF INDIGOFERA MYSORENSIS

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In recent years, there has been a significant rise in the popularity of herbal medications. This is primarily due to their perceived safety, effectiveness, and superior therapeutic outcomes, as well as their comparatively lower cost compared to synthetic or conventional drugs, which often come with various therapeutic challenges. This study aimed to conduct preliminary phytochemical studies and evaluate the anxiolytic activity of the methanolic extract of Indigofera mysorensis. Pharmacological and acute toxicity studies of Methanolic extract followed OECD-423 guidelines, revealing no adverse effects up to 2000mg/kg body weight. Preliminary phytochemical screening confirmed the presence of Carbohydrates, Alkaloids, Phytosteroids, Flavonoids, Phenolic compounds, and Tannins. Anxiolytic activity was assessed using the Elevated Plus Maze, Open Field, and Rota rod tests. Methanolic extract of Indigofera mysorensis significantly increased open arm entries while reducing time spent in closed arms, indicating anxiolytic properties. Extract-treated mice exhibited increased rearings and time spent in the center, along with decreased locomotory scores and fall time from the rotating rod. These findings support the traditional use of Indigofera mysorensis in ethnomedicine and suggest its potential as a source for anxiolytic compounds.The Methanolic extract of Indigofera mysorensis demonstrates anxiolytic effects, aligning with its ethnomedicinal use. The isolation of active compounds from this plant could lead to the development of novel drugs for managing anxiety disorders.

Keywords: Phyto Chemical Evaluation, Anxiolytic Activity Methanolic Extract, Indigofera Mysorensis.

PPC 118
INFLIXIMAB INDUCED PERONEAL NERVE PALSY IN THE TREATMENT OF IBD – A CASE REPORT

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Anti-tumor necrosis factor (TNF) therapy has revolutionized the medical treatment of the inflammatory bowel diseases (IBD), Crohn's disease (CD), and ulcerative colitis. Infliximab, an intravenously administered chimeric anti-TNF antibody, was the first anti-TNF agent to be originally approved for use in inflammatory bowel diseases (IBD) in 1998. Patients have developed antibodies (human anti-chimeric antibodies) against infliximab, which lowers the drug's efficacy and causes adverse reactions. Anti-TNF therapy associated neurological deficits are uncommon. Although, common peroneal nerve palsy was observed as a rare complication of anti-tumor necrosis factor (TNF) agents. We report a case of foot drop as the result of common peroneal nerve palsy secondary to infliximab therapy in IBD patients.

Keywords: Infliximab, Peroneal nerve palsy, Inflammatory bowel disease, Foot drop

PPC 119
COGNITIVE BEHAVIOURAL THERAPY

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Cognitive behavioral therapy (CBT) is a psychotherapeutic approach that addresses dysfunctional emotions, maladaptive behaviors and cognitive processes and contents through a number of goal-oriented, explicit systematic procedures. CBT is thought to be effective for the treatment of a variety of conditions, including mood, anxiety, obsessive compulsive disorder,bulimia and psychotic disorders. CBT can help to change how you think ('Cognitive') and what you do ('Behaviour'). CBT can help to make sense of overwhelming problems by breaking them down into smaller parts. It is the most effective psychological treatment for moderate and severe depression. A course may be from 6 weeks to 6 months. It can seriously affect the ability to work and enjoy life.

Keywords: cognitive,psychotherapeutic,maladaptive,bulimia.

PPC 120
THE DUAL NATURE OF AMYGDALIN (VITAMIN B17): BENEFITS VERSUS CONTROVERSIES

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Amygdalin, also known as Vitamin B17 is often considered as anticancer remedy and can be found in many plants. Bibliographical searches were performed in available studies and reports using the following terms:" amygdalin", "laetrile", "vitamin B17" and "cancer treatment". Administration of amygdalin may help protect against some cancer types. It also boosts immunity and reduces pain in several diseases. One interesting effect of amygdalin is blood pressure lowering. Vitamin B17 refers to a drug called laetrile, an artificial form of amygdalin. Laetrile has been tested on cultured animal cells, in whole animals, in tumor cells from one species transplanted onto another species, and in humans to determine whether it has specific anticancer properties. Proponents of laetrile have proposed four different theories to explain its purported anticancer activity. The first of these incorporates elements of the trophoblastic theory of cancer. The second theory states that cancer cells contain more beta-glucosidase activity than normal cells. The third theory states that cancer is the result of a vitamin deficient metabolic disorder. The fourth theory suggests that the cyanide released by laetrile has a toxic effect beyond its interference with oxygen utilization by cells. Besides the beneficial effects, it could be very toxic because the level of cyanide, as very dangerous poison, is very high. This is the reason for failure of many clinical trials linked with anticancer effects of amygdalin in past. Vitamin B17's potentially big benefits are: - May help protect against cancer, boost immunity, reduces pain, lowers high blood pressure.

Keywords: Amygdalin, Vitamin B17, laetrile, beta-glucosidase, trophoblastic theory of cancer, metabolic disorder, anticancer.

PPC 121

NERIVIO FOR THE ACUTE AND PREVENTIVE TREATMENT OF MIGRAINE

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Migraine is a neurological condition characterized by episodes of moderate-to-severe headache that affect up to 10% of the population in Singapore. Current first-line treatment for migraine includes pharmacological therapy which is limited by its suboptimal efficacy, tolerability and medication overuse. Nerivio (Theranica Bio-Electronics Ltd) is a drug-free, prescribed digital therapeutic wearable that delivers remote electrical neuromodulation for the acute and preventive treatment of migraine, with or without aura, in patients 12 years of Age or older. Evidence underpinning the assessment consists of nine comparative studies as key evidence and five real-world studies as supplementary evidence. Nerivio was found to be safe, with no device-related serious adverse events and a low rate of device related AEs. As an acute treatment: Nerivio demonstrated comparable pain relief, Pain freedom, and migraine symptoms relief post-treatment, consistent across migraine types and age groups, and may be preferred by episodic migraine patients. As a preventive treatment: Nerivio led to a significantly greater reduction in migraine days per month compared to sham in adults, with no between-group differences in patient's functional well-being and quality of life. In adolescents, nerivio significantly reduced the number of migraine treatment days. A local clinician shared that there is a local clinical need for neuromodulation treatments such as nerivio, for non-pharmacological management of migraine.

Keywords: migraine, nerivio, digital therapeutic wearable device, non-pharmacological management of migraine.

PPC 122

DOSING CHALLENGES AND BENEFITS OF VERCIGUAT IN A PATIENT WITH DECOMPENSATED HEART FAILURE: A CASE STUDY

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Heart failure with reduced ejection fraction is a condition with a growing prevalence among older adults. While therapeutic advances have managed to slow the progression of the disease, hospitalization rates remain high, reaching 32-44%. A 72-year-old male patient with ischemic cardiomyopathy presented with dilated heart failure, a reduced LVEF of 24%, and elevated pro-BNP levels of 17,406 pg/mL. The patient had NYHA class III symptoms. The patient was being treated with sacubitril/valsartan 24.3/25.7 mg BD, eplerenone 25 mg OD, bisoprolol 2.5 mg OD, dapagliflozin 10 mg OD, and furosemide 80 mg TID. Despite this regimen, the patient continued to experience severe congestion and required frequent hospitalizations for drainage. Over the course of two months, the patient was hospitalized twice due to decompensated heart failure. Upon initiating vericiguat treatment, the dose recommendations were followed, starting the patient on a low dose of 2.5 mg, and then doubling every 15 days until reaching a target dose of 10 mg once daily. This patient has a low blood pressure baseline, so the tendency to hypotension when initiating vericiguat, and doubling its dose caused hypotension within three days of each dose titration, but the patient tolerated the medication well throughout the titration period, despite the progressive decrease in systolic pressure. Notably, the patient experienced a significant decrease in fluid congestion and a reduction in diuretic requirements, leading to an improvement in quality of life. The patient has been asymptomatic for over three months and has not required hospitalization since initiating vericiguat add-on therapy.

Keywords: Heart failure with reduced ejection fraction (HFrEF), Left Ventricular Ejection Fraction (LVEF), pro-BNP, NYHA class III symptoms, hypotension.

PPC 123

PHARMACOLOGICAL EVALUATION OF ANTIDIABETIC ACTIVITY OF ETHANOLIC EXTRACTS OF LEAVES OF POUTERIA COMPECHIENA IN WISTAR RATS

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Type 2 diabetes is far more common and results from a combination of defects in insulin secretion and insulin action, either of which may predominate. People with type 2 diabetes are not dependent on exogenous insulin but may require it for the control of blood glucose levels if this is not achieved with diet alone or with oral hypoglycemic agents. The main aim of this study involves the isolation and pharmacological evaluation of antidiabetic activity of ethanolic extract of Pouteria Compechiena leaf extract. Extraction of plant constituents was achieved by Soxhlet extraction with ethanol and the presence of various chemical constituents were confirmed by chemical tests and spectral analysis. Acute oral toxicity, oral glucose tolerance test and antidiabetic activity were performed. The results indicated that the ethanolic extract of Pouteria Compechiena displayed good antidiabetic activity and less toxicity.

Key words: Antidiabetic activity, Pouteria Compechiena, oral glucose tolerance, oral acute toxicity.

PPC 124

INVESTIGATION OF HEPATOPROTECTIVE AND ANTIOXIDANT ACTIVITIES OF INDIA MEDICINAL PLANTS

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The present study was deals with evaluation of hepatoprotective and antioxidative activities of methanol extracts of Michella Champaca (MEMC), Limnophila Heterophylla (MELH) and Couroupita Guianensis (MECG) leaves against carbon-tetrachloride (CCl4) induced hepatotoxicity in rats.Hepatotoxicity in rats was induced by CCl4 (1:1 v/v, 0.5 ml/kg, i.p) and the protective effect of Michella Champaca, Limnophila Heterophylla and Couroupita Guianensis (250 mg/kg/p.o. and 500 mg/kg/p.o) was identified by estimating marker enzymes. CCl4 treated rats shows significant changes in biochemical parameters i.e. levels of total protein were reduced and increases in Serum Glutamate Pyruvate Transaminase (SGPT), Serum Glutamate Oxaloacetate Transaminase (SGOT), Alanine Phosphatase (ALP), Serum bilirubin, which were restored towards normalization in extracts treated rats. Histopathological analysis of the liver, which demonstrates normal cells in the liver as compared to the hepatotoxicant group, further supported the hepatoprotective effect of the extracts.

Keywords: Hepatoprotective activity, Carbon tetrachloride, Antioxidant activity, Limnophila heterophylla, Couroupita guianensis, Michelia champaca.

PPC 125

PHYTOCHEMICAL SCREENING AND PHARMACOLOGICAL EVALUATION OF ANTI UROLITHATIC ACTIVITY OF WHOLE FRUIT OF CUCUMIS SATIVUS IN RATS

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Medicinal plants have played a significant role in various ancient traditional system of medicine. The cucumber is the edible fruit of cucumber plant cucumis sativus . The aim of study is to evaluate the antiurolithiatic activity of ethanolic extract of cucumis sativus against caox stones induced by rat feed .urolithiasis is most common disease of urinary tract which has been afflicting humankind since antiquity. Urolithiasis can be treated by different ways : such as dietary management; drug management;surgical management.The pharmacognostic and phytochemical investigations include qualitative methods such as collection and authentication; extraction ; preliminary qualitative chemical analysis; characterization of active phyto constituents. The clinical diagnosis is X ray ; computed tomography and ultrasound are used in order to diagnose urolithiasis . In the indigenous system of medicine cucumis sativus is claimed to be useful in treatment of urinary stones . Ethylene glycol induced urolithiasis model in male albino rats to know the result.

Keywords: urolithiasis ; berginia ligulate ; antiquity .

PPC 126

DIAGNOSIS OF CIRRHOSIS BY TRANSIENT ELASTOGRAPHY (FIBROSCAN)

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Transient elastography (Fibro Scan) is a new, non—invasive, rapid, and reproducible method allowing evaluation of liver fibrosis by measurement of liver stiffness. In cirrhotic patients, liver stiffness measurements range from 12.5 to 75.5 kPa. However, the clinical relevance of these values is unknown. This prospective study aimed to evaluate the accuracy of liver stiffness measurement for the detection of cirrhosis in patients with chronic liver disease. A total of 711 patients with chronic liver disease were studied. Etiologies of chronic liver diseases were hepatitis C virus or hepatitis B virus infection, alcohol, non—alcoholic steatohepatitis, other, or a combination of the above etiologies. Liver fibrosis was evaluated according to the METAVIR score. Stiffness was significantly correlated with fibrosis stage ($r = 0.73$, $p < 0.0001$). Areas under the receiver operating characteristic curve (95% confidence interval) were 0.80 (0.75–0.84) for patients with significant fibrosis ($F > 2$), 0.90 (0.86–0.93) for patients with severe fibrosis (F3), and 0.96 (0.94–0.98) for patients with cirrhosis.

Keywords: liver stiffness, portal hypertension, fibrosis, oesophageal varices, liver biopsy, hepatocellular carcinoma, ascites

PPC 127

HISTOPATHOLOGICAL STUDIES AND HERBAL FORMULATION OF HAIR GEL FOR HAIR GROWTH

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Hair is one of the vital part of body derived from ectoderm of skin.Herbal cosmetics are the preparation used do enhance human appearance. cosmetic product which consists of plant material as active ingredient called us Cosmeceuticals kokate (2012).The aim of this research is to formulate and evaluate the different herbal hair gel using carbopol as base.This study is done to reduce the common causes of hair and scalp disorder such as hair fall dandruff alopecia and certain disease.There are certain medications available for Hair and scalp disease but they have serious side effects and also don't provide permanent relief . Beta -sitosterols is a dietary phytosterol found in plants.Plant oil tend to contain highest concentration of Beta-sitosterols.Beta-sitosterols inhibits enzyme 5 alpha reductase which is responsible for conversion of testosterone to dihydrotestosterone.DHT plays an influential role in hairloss.Querecetin is a polyphenolic bioflavonoids or flavanoid which reduces the PGD2 level which is responsible for balding scalp and hair loss.Thora et al 2009 have studied the development and evaluation of polyherbal formulation for hair growth activity.In vitro includes colour,washability spreadability, viscosity, determination of pH and diffusion study .In vivo studies includes Animal studies, Skin irritation test, Hair growth initiation and competition test ,Hair length determination, Histological studies.Wistar rats are used for invivo studies,formulations and standard drugs in wistar rats are compared to know the result.

Keywords: Herbal hair gel, Hair fall,Hairgrowth, cosmaceuticals, Querecetin, Beta sitosterols, wistar rats.

PPC 128

PHYTOCHEMICAL SCREENING AND PHARMACOLOGICAL EVALUATION OF ANTI UROLITHATIC ACTIVITY OF WHOLE FRUIT OF CUCUMIS SATIVUS IN RATS

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Medicinal plants have played a significant role in various ancient traditional system of medicine. The cucumber is the edible fruit of cucumber plant Cucumis sativus. The aim of study is to evaluate the antiurolithiatic activity of ethanolic extract of Cucumis sativus against caox stones induced by rat feed. Urolithiasis is most common disease of urinary tract which has been afflicting humankind since antiquity. Urolithiasis can be treated by different ways ; such as dietary management; drug management;surgical management. Current study includes the use of Cucumber to treat the stones. The pharmacognostic and phytochemical investigations include qualitative methods such as collection and authentication; extraction ; preliminary qualitative chemical analysis; characterization of active phyto constituents. The clinical diagnosis involves x ray ; computed tomography and ultrasound in order to diagnose urolithiasis. The alcoholic extract of cucumber is capable of dissolving phosphate type of calculi developed by foreign insertion method zinc discs in bladder of albino rats . In the indigenous system of medicine cucumis sativus is claimed to be useful in treatment of urinary stones . Ethylene glycol induced urolithiasis model in male albino rats is used to know the result.

Keywords: urolithiasis ; Cucumis sativus; antiurolithiatic, ethylene glycol

PPC 129
A REVIEW ON CLINICAL SAS

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Clinical SAS programming is all about applying SAS programming skills to clinical data. Clinical data is obtained when any clinical trials are conducted about any new drug that needs to be introduced into the market. Clinical trials are generally divided into three phases (Phases I through III) with a fourth pharmacovigilance phase if that is necessary. The Statistical Analysis System (SAS) is widely used to analyze this data and standardize it before submitting it to any regulatory authority such as the Food and Drug Administration (FDA), USA. Clinical SAS programming has three major steps that helps to standardize the raw data obtained in clinical trials. These are Study Data Tabulation Model (SDTM), Analysis Data Model (ADaM), Tables Listings and Graphs (TLG). These steps are used to standardize the raw data available to generate reports as needed. Clinical SAS programming is extensively used in all the three steps to make the data meaningful and ready for submission and approval by any regulatory authority.

Keywords: SAS programming, Clinical trials, Food and Drug Administration (FDA), Study Data Tabulation Model (SDTM).

PPC 130
INTEGRATION OF PHARMACOGENOMICS IN PHARMACY PRACTICE

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The integration of pharmacogenomics into pharmacy practice represents a significant advancement in personalized medicine, allowing for the tailoring of drug therapies based on individual genetic profiles. This study explores the current state, challenges, and opportunities of incorporating pharmacogenomics in clinical settings. It evaluates the potential benefits of pharmacogenomic-guided therapy, including improved efficacy, reduced adverse drug reactions, and optimized drug dosing. Additionally, the research addresses the educational needs of pharmacists, the infrastructure required for implementation, and the impact on patient outcomes. Through a review of existing literature and case studies, this study aims to provide a comprehensive overview of how pharmacogenomics can be effectively integrated into pharmacy practice, ultimately enhancing the role of pharmacists in personalized healthcare and improving patient care. The findings suggest that while significant barriers exist, such as cost, lack of standardized protocols, and limited knowledge among pharmacists, the benefits of integration could lead to more precise and effective pharmacotherapy, highlighting the need for targeted educational programs and policy development to support this transition

Keywords: Pharmacogenomics, Tailoring, Genetic profiles, Literature, Case studies , Health care , standardized protocols , Integration , policy.

PPC 131
ARTIFICIAL CORNEA- A CLEAR VISION ACHIEVES MANY RESULTS

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The cornea is a clear, transparent tissue. It transmits almost 100% of the visible radiation. About 70% of the total dioptric power of the human eye is due to the interface between the cornea and the air. Since 1798 there has been a desire to produce a synthetic cornea or Keratoprothesis, so that it would be an alternative to human donor corneal tissue. Many attempts in producing such a device have occurred over the past 60 years old. The development process to create the first soft synthetic, biointegratable artificial cornea known as Alphacor. Over a 10- year period the ideal device was produce, tested in laboratory next followed by animal tests and surgery, with eventual human trials beginning in 1998. Details & the results of initial trials that led to US(FDA) Food and Drug Administration Alphacor provides a treatment option for patients with corneal blindness in which a donor tissue graft would not succeed. Corneal transplantation is highly successful in low -risk patients with corneal blindness, but eventually fails to those with high -risk indications such as recurrent or Chronic inflammatory disorders, History of Glaucoma & Herpetic infections, and those with neovascularisation of the host bed. The future of eye transplantation – Artificial cornea 3D bio printed using human cells. All the corneas come from eye banks of United States, which are regulated by the FDA. The success rate of corneal transplants is amazingly good, nearly 95%.

Keywords: Artificial Cornea, Keratoprothesis, Alphacor, 3D Bioprint.

PPC 132
FRIEDREICH ATAXIA- A CASE REPORT

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Friedreich ataxia is a genetic condition results in the autosomal recessive FXN gene mutation. While muscle strength is intact, it appears that ataxia and balance problems are the main reasons restricting movement due to its effects on the body's neural activity, which results in a lack of coordination. Early adolescence is typically when it first appears, most frequently between the ages of 8 and 15. Early in 2023, the US Food and Drug Administration authorized Omaveloxolone, thus becoming the first medication available to patients with FRDA. A case of 18-year-old boy who belonged to category of white population presented with progressive gait disturbance and falls. Symptoms including unable to sit without support, walk and speech was not within the normal range. On examination around the age of 16 years he was falling more and exam showed evidence of increased tone in lower extremities with foot drop and steppage gait in addition to decreased proprioception in the lower extremities and inconsistent responses in the upper extremities. TP-PCR, a Genetic test was advised for the patient and rest of the family members. FBS- 135mg/dL (70-100mg/dL), PPBS-142mg/dL (< 140mg/dL), TP-PCR-positive. The geneticist suggested Symptom-management approach like physical therapy, orthotic shoe, neurology and endocrinology consultation. The physician has prescribed the drug Omaveloxolone once a day for 6 months.

Keywords: Friedreich ataxia, Omaveloxolone, 18-year-old boy, TP-PCR-positive, Genetic test.

PPC 133
NEXT-GENERATION HEALING: INTRODUCING ZIPSTITCH REDEFINING FIRST AID

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Wound healing is a sophisticated biological process that needs many well-planned steps in order to restore tissue integrity. This research looks at the intricate cellular and molecular mechanisms that support the many phases of wound healing, including proliferation, inflammation, and tissue remodeling. Key biological elements—growth factors, extracellular matrix components, immune cells, and keratinocytes—that facilitate effective wound closure are emphasized. Understanding these processes is crucial to designing treatment plans that can encourage and expedite wound healing for both acute injuries and chronic wounds. The abstract also discusses current advancements in the field of wound healing research, highlighting the use of innovative techniques and recently created technologies to enhance treatment outcomes for a variety of patient populations. The zip stitch is a non-invasive method of skin closure used for surgical wounds and injuries. Its goal is to distribute the strain throughout the cut. Reduced wound complications might result in time and cost savings. Zip stitching has potential benefits outside the healthcare industry. Furthermore, the skin closure method with no punctures increases patient satisfaction. This results in reduced pain, more range of motion during recovery, and less scarring.

Keywords: Zip stitch, Puncture-free skin closure method, Would healing, Phases, therapeutic strategies,.

PPC 134
THE PAINLESS BIRTHING METHOD: PSYCHOPROPHYLACTIC APPROACH

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Psychoprophylaxis is a technique that combines relaxation and controlled breathing to manage labor discomfort. In many Western civilizations, it is a common practice among women giving delivery. The lady is anticipated to respond in the same manner to actual contractions during labor by means of consistent practice throughout pregnancy and by reacting to simulated contractions. The ideas and physiological factors of a painless labor are covered in Psychoprophylactic Preparation for Painless labor, a psychoprophylactic approach. The sensations associated with labor pain are multifaceted, including aspects related to the body, mind, and spirit. Psychoprophylaxis is thought to impact each of these dimensions: cognitively by emphasizing breathing and relaxation over pain perception, psychologically by lowering anxiety and enhancing a feeling of personal control, and physically by increasing oxygenation and lowering muscular tension. It's possible that the women who used psychoprophylaxis had different personalities and attitudes from the non-users, and that they were also healthier and less likely to have problems when labor started. While psychoprophylaxis may not have an impact on the experience of labor or the use of epidural analgesia, it may lower the risk of emergency cesarean sections.

Keywords: Chidlbirth, Painless labor, Psychoprophylactic Technique, Cesarean section.

PPC 135
A REVIEW ON RENAL SURGERY ASSISTED BY ROBOTS

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This study looks at the present use of robot-assisted renal surgery in complicated and partial nephrectomies, such as those involving vena cava thrombosis, combination nephroureterectomies, nephrectomies using live donors, auto transplants, and patients with challenging anatomy like those with adhesions or obesity. The indications for traditional laparoscopic techniques and robot-assisted renal surgery are similar. A lower learning curve causes the process to stabilize and further boosts the quantity of minimally invasive treatments carried out. A Med line literature search for papers in the area of robotic kidney surgery has been undertaken using the Mesh terms: robotic surgical procedures and kidney. Future approaches include advancements in image-guided robotic surgery and robotic technology and instruments, which will lead to greater downsizing of robotic procedures such as laparoscopic single-site treatments. Robotic kidney surgery has a multitude of options for various forms of renal surgery. This innovative method may be especially useful for difficult and restorative treatments like nephron-sparing kidney surgery. This chapter covers nephroureterectomy, nephron-sparing surgery, specific considerations, complications, trocar implantation, and OR setup for both simple and radical nephrectomy.

Keywords: Pyeloplasty, Minimally invasive, Robot, Kidney Nephrectomy, Transplantation

PPC 136
PROGRESS IN ORGAN-ON-A-CHIP TECHNOLOGY: HUMAN BODY-ON-A-CHIP FROM SINGLE ORGANS

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The idea of a "human body on chip," which attempts to imitate the intricacy of human physiology by combining many organ models on a single platform, has expanded to include organ-on-a-chip (OOAC) technology. Comparing this method to single-organ models gives a more thorough knowledge by enabling the study of inter-organ interactions and systemic responses to medications and illnesses. The creation of connected organ modules, such as the lung, heart, liver, and kidney, which are connected by a microfluidic system to imitate blood circulation, is one of the most recent advances in human body on chip technology. Compared to conventional in vitro and animal models, this networked approach allows researchers to replicate the effects of drug metabolism and toxicity across several organs, providing a more precise prediction of human reactions. For instance, the liver module may mimic drug metabolism and detoxification, while the lung module can be used to investigate how medications or toxins that are breathed affect respiratory function. The kidney module may mimic medication clearance and renal function, while the heart module can be used to evaluate cardiac toxicity. Through the integration of several organ models, scientists may establish a more comprehensive understanding of drug reactions and disease processes, resulting in more efficient drug discovery and customized treatment strategies. All things considered, human body on chip technology is a major breakthrough in biomedical research, providing a platform that may transform disease modeling, toxicity testing, and drug development by giving a more realistic and physiologically appropriate depiction of human biology.

Keywords: Organ-on-a-chip Technology, OOAC, Human body on Chip, Modeling

PPC 137
A REVIEW ON CRYOPRESERVATION OF UMBILICAL CORD TISSUE

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Within the scope of this, we offer the most recent information about the feasibility of cryopreserving umbilical cord tissue for eventual therapeutic use. Several protocols for getting umbilical cord-derived vasculature, Wharton's jelly-based grafts, multipotent stromal cells, and other biomedical products from cryopreserved umbilical cords are emphasized, and a discussion is held on the potential clinical uses of these products. An analysis of the most current research suggests that we should anticipate a significant increase in the need for cryopreservation of umbilical cord tissues in the not too distant future.

Keywords: Cryoprotectants, Umbilical cord, Tissue cryopreservation, Mesenchymal stem cells.

PPC 138
PREDICTIVE PHARMACOLOGY FOR TAILORED THERAPEUTICS

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Pharmacogenomics focuses on the study of how an individual's genetic makeup affects their response to drugs. Some patients may have side effects or have poor response to a drug while others may have a more favourable response. This is where Pharmacogenomics comes in as it seeks to understand the metabolize and drug response which contributed by genetic factors. Also pharmacogenomics is the use of genomics and other omic information of an individual which maximize drug efficacy and minimize adverse drug reactions. Pharmacogenomics refers to the contribution of multiple variants and genes on drug response rather than on one or two genes in Pharmacogenetics. If we can use pharmacogenomics information to prescribe each individual patient the most effective and least harmful medication based on their genetic makeup not only could it present a baby dying from toxic breast milk, bone marrow damage in a patient with an autoimmune disease. The field of pharmacogenomics is growing a new approaches. Genetic Changes in drug transporters and various enzymes and non-genetic changes like sex, concurrent diseases, response to medications, drug-drug interactions and environmental factors. Percentage of drugs metabolized by different enzymes with example drug. CYP 3A4 and CYP3A5 (30.2%), CYP2D6(20%), CYP2C9(12.8%), CYP1A2(8.9%), CYP2C19(6.8%), CYP2E1(3%), Other enzymes (18.3%). Personalized medicine with Pharmacogenomics serving as a key tool to improve outcomes.

Keywords: Pharmacogenomics; Genomics; Genetic makeup; multiple variants; Drug efficacy, personalized medicine.

PPC 139

NEUROPROTECTIVE EFFECT OF KAEMPFERIDE AND NORBERGENIN AGAINST GALACTOSE INDUCED NEUROTOXICITY– AN IN VIVO MODEL FOR BRAIN AGING

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Brain ageing is a common threat to neurodegenerative diseases. The objective of this research was to assess the effects of Kaempferide and Norbergenin on D-galactose-induced brain aging in rats and their regulating mechanisms.In this investigation, D-galactose (200 mg/kg body wt.) was given orally daily for 45 days to accelerate aging. Kaempferide and Norbergenin (5 and 10 mg/kg body weight, respectively) were administered orally. The anti-oxidant and anti-brain aging activities of Kaempferide and Norbergenin in serum were measured by the estimation of Superoxide Dismutase (SOD), Glutathione Peroxidase (GSH-Px), Catalase (CAT), and Malondialdehyde (MDA) levels in brain tissues were measured by western blot analysis and histopathological studies.Results revealed that flavonoids KPD and NRG significantly inhibit reactive oxygen species in D-galactose-induced brain aging. D-galactose suppresses the levels of Superoxide Dismutase, Glutathione Peroxidase, Catalase, and total antioxidant capacity in rats. These levels were elevated by treatment with Kaempferide and Norbergenin. Malondialdehyde levels were elevated in D-galactose- induced rats. Kaempferide and Norbergenin suppress the malondialdehyde levels in rat brain tissue.Kaempferide and Norbergenin decrease mitochondrial dysfunction induced by D-galactose by improving the activities of the acetylcholinesterase enzyme. The results of Western blot analysis showed that the degree of brain tissue damage was reduced by two molecules.The results of our study indicated that both KPD and NRG treatments reduced oxidative stress by exerting a protective effect against D-galactose-induced aging in rats by significantly decreasing reactive oxygen species, apoptosis, caspase enzyme, acetylcholinesterase enzyme, and total protein count in in-vivo studies. KPD exhibits potent anti-oxidant activity by increasing antioxidant enzymes. Our research revealed that the flavonoid Kaempferide enhances neuronal protective activity more than Norbergenin.

Keywords: Flavonoid, D-galactose, Kaempferide, Norbergenin, and Acetylcholinesterase Enzyme.

PPC 140

ROLE OF CLINICAL PHARMACIST IN APPREHENSION OF HYPERTENSION AND RELATED COMPLICATIONS

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Hypertension is a serious medical condition that significantly increases the risk of heart, brain, kidney and other diseases. According to WHO, an estimated 1.4 billion people worldwide have high blood pressure, but just 14% have it under control. An estimated 46% of adults with hypertension are unaware that they have the condition. One of the global targets for noncommunicable diseases is to reduce the prevalence of hypertension by 33% between 2010 and 2030.To successfully achieve this target, the principal aim is hence to ascertain the importance of blood pressure control and other factors in lowering the incidence and retarding the progression of macro vascular complications. Magnitude of hypertension is high among old aged population, alcoholics and diabetic patients with predicted high risk of stroke and coronary heart disease. The reasons for the uncontrolled BP are poor disease knowledge, medication incompliance, non-adherence to alcohol abstinence, high salt diet, less physical activity and older age. Clinical pharmacist at an early stage can monitor the blood pressure and related risk factors, thereby enhancing the quality life of the patient and can help in reducing the burden of costly drugs. Substantial improvements have been made due to the key involvement of a Clinical pharmacist with regard to awareness and treatment of hypertension. Continuous health education, patient counselling and information regarding adherence and satisfaction of the patients is very essential.

Keywords: Hypertension, macrovascular complications, diabetics, Clinical Pharmacist.

PPC 141
A CASE STUDY ON ROTHMUND THOMSON SYNDROME

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Rothmund-Thomson syndrome (RTS) is a rare genodermatosis presenting with characteristic facial rash (poikiloderma) associated with short stature, sparse scalp hair, sparse or absent eyelashes and or eyebrows, juvenile cataracts, skeletal abnormalities, radial ray defects, premature aging and a predisposition to cancer. Though first reported way back in 1968, only 200 cases of established RTS have been reported worldwide by the year 1992. It is presumed to be inherited as an autosomal recessive disorder. The diagnostic hallmark of RTS is Poikiloderma and skeletal abnormalities which make it different from other developmental disorders.In this case study, A patient of 19 year old with poikiloderma, skeletal abnormalities and dental abnormalities. In this case study of the various abnormalities of the patient has been reviewed.

Keywords: Poikiloderma, Skeletal Abnormalities, Failure of eruption of teeth.

PPC 142
PHARMACOLOGICAL EVALUATION OF ANTI-DEPRESSANT ACTIVITY USING POLYHERBAL EXTRACT

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The Indian landmass is enriched by a range of flora each aromatic and medicative plants. There has been an increase, worldwide, in the use of medicinal plants and herbs for developing nutraceuticals for treatment of depression and other psychiatric disorders. A polyherbal ayurvedic formulation from classical text of ayurveda is evaluated for its activity against depression. The polyherbal formulation contained three different drugs viz., Tulsi (Ocimum tenuiflorum L.,), Ashwagandha (Withania somnifera L.,), andSpinach (Spinacia oleracea L.,). The formulation has not been tried before in clinical practice but individually was found to be usefulin certain number of cases of depression, so was tried in the same form i.e., by maeceration and soxhelt apparatus (methanolic extract) in experimental animals to revalidate the claims of the same. The formulation was tried on experimental animal models which are mice. Amitriptyline was used as the standard drug for comparison. The formulation showed inhibitory activity against depression induced in these experimental animal models. The activity was comparable with the standard drug Amitriptyline. The results obtained established the efficacy of this polyherbal formulation against psychological disorder, depression.

Keywords: Depression, Treatment, Anti-Depressants, Medicinal plants, Tulsi, Ashwagandha, Spinach, Polyherbal formulations.

PPC 143
ADDRESING ANTIBIOTICS RESISTANCE, THE ROLE OF PHARMACIST

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The increasing prevalence of infections caused by antibiotic-resistant bacteria is a global healthcare crisis. Understanding the spread of resistance is predicated on the surveillance of antibiotic resistance genes within an environment. The pharmacist's role in combating and preventing infectious diseases is essential as antibiotic and vaccine regimens become more complex due to the continuously evolving epidemiology of infections. The decrease in drug development makes the preservation of currently available antibiotics paramount, highlighting the roles that pharmacists play in maximizing the utility of available drugs. While further training in infectious diseases may be necessary for some pharmacist roles in preventing antibiotic resistance, many others exist that all pharmacists can embrace.

Keywords: Antibiotic resistance, Role of Pharmacists, Global health crisis, Epidemiology, Super bugs.

PPC 144
DECENTRALIZED TRAILS & HYBRID MODELS

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The landscape of clinical trials is undergoing a significant transformation with the advent of decentralized and hybrid models. Traditionally, clinical trials have been conducted at centralized locations, requiring participants to travel to specific sites. This approach often poses challenges such as limited patient access, logistical burdens, and high costs. The need for more flexible and patient-centric trial designs has driven the development of decentralized and hybrid clinical trials, leveraging technology to facilitate remote participation and data collection. The primary objectives of decentralized and hybrid clinical trials are to enhance patient access and diversity, reduce the logistical and financial burdens on participants, and improve the efficiency and quality of data collection. These models aim to bring the trial to the patient rather than the patient to the trial, thereby increasing enrolment rates and retention, and ensuring more representative study populations. Decentralized and hybrid clinical trials are implemented through a combination of remote monitoring technologies, digital tools, and traditional clinical site visits. Decentralized and hybrid clinical trials represent a paradigm shift in clinical research, offering numerous benefits such as increased patient convenience, enhanced trial accessibility, and improved data quality. Early evidence suggests that these models can accelerate trial timelines, reduce costs, and yield more generalizable results. However, successful implementation necessitates addressing challenges related to technology adoption, regulatory compliance, and data privacy. As the field continues to evolve, decentralized and hybrid clinical trials are poised to become a standard practice, driving innovation and improving outcomes in clinical research.

Keywords: wearable devices, telemedicine consultations, mobile health applications, and electronic data capture systems.

PPC 145
DIGITAL THERAPEUTICS

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Digital therapeutics (DTx) represent a rapidly evolving category within the healthcare landscape, utilizing software applications to deliver evidence-based therapeutic interventions directly to patients. These technologies are designed to prevent, manage, or treat a broad spectrum of physical, mental, and behavioural conditions, offering a novel approach to traditional treatment paradigms. The primary objectives of digital therapeutics are to enhance patient outcomes through personalized, data-driven interventions and to provide scalable, accessible, and cost-effective solutions for managing chronic diseases and improving overall health. Specifically, DTx aims to integrate seamlessly into patients& daily lives, promoting adherence to treatment plans and facilitating continuous monitoring and feedback. The implementation of digital therapeutics involves the development ofsoftware applications that leverage various technologies such as mobile apps, and AI-driven analytics. These applications are subjected to rigorous clinical validation to ensure their efficacy and safety. Successful deployment requires collaboration between technology developers, healthcare providers, and regulatory bodies to ensure that DTx solutions are integrated into existing healthcare systems and meet the needs of both patients and providers.Digital therapeutics hold significant promise for transforming healthcare delivery by making it more personalized, proactive, and patient-centric. Early evidence suggests that DTx can lead to improved health outcomes, increased patient engagement, and reduced healthcare costs. However, widespread adoption will require ongoing research, supportive regulatory frameworks, and increased awareness among healthcare professionals and patients. As the field continues to mature, digital therapeutics are poised to become a cornerstone of modern healthcare, offering new opportunities for managing and treating a wide range of conditions.

Keywords: enhance engagement, interoperability, electronic health records (EHRs), and regulatory standards.

PPC 146

ROLE OF PROBIOTICS AND PREBIOTICS FOR HEALTH AND DISEASE MANAGEMENT, FOCUSING ON OBESITY AND DIABETES

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Probiotics and prebiotics are increasingly recognized for their role in managing metabolic disorders such as obesity and diabetes. These compounds modulate gut microbiota, which is crucial for maintaining metabolic health. This study aims to investigate the impact of probiotics and prebiotics on obesity and diabetes management, focusing on their mechanisms and efficacy. A comprehensive review of recent clinical trials and experimental studies was conducted to evaluate the effects of specific probiotic strains (*Lactobacillus gasseri*, *Bifidobacterium breve*, and *Lactobacillus acidophilus*) and prebiotic fibers (inulin and fructooligosaccharides) on body weight, glycemic control, and inflammation markers. Probiotics were found to restore gut balance, enhance gut barrier function, and reduce inflammation, leading to improved metabolic health. *Lactobacillus gasseri* and *Bifidobacterium breve* significantly reduced body fat, while *Lactobacillus acidophilus* improved glycemic control. Prebiotics promoted the growth of beneficial bacteria, increased SCFA production, and regulated appetite, aiding in weight management and improved glucose levels. Synbiotics, combining probiotics and prebiotics, showed enhanced effects on body weight, insulin resistance, and inflammation markers. Probiotics and prebiotics present promising approaches for managing obesity and diabetes. Their integration into dietary strategies could complement conventional treatments, providing a holistic approach to these metabolic disorders. Further research is essential to optimize their use.

Keywords: Probiotics, Prebiotics, Obesity, Diabetes, Gut Microbiota, Metabolic Health.

LIST OF ABSTRACTS SELECTED FOR ORAL PRESENTATIONS IN PPC

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2	PPC 15	Tasneem Fathima, M.Snehitha Reddy, Aliya Simran, S.Shiva Kumar	*G.Pulla Reddy College Of Pharmacy, Hyderabad, Telangana, India	The Impact Of Clinicopathological Features And Treatment Approach For The Outcome Of Iga Nephropathy In Indian Population
3	PPC 19	Rangam Chariitha	Smt. Sarojini Ramulamma College Of Pharmacy, Mahabubnagar, 509001, Telangana, India.	Assessment Of Antiulcer Potential Of Holostemma Ada Kodien
4	PPC 37	Najiya Fatima*, Sampurna Gosh, Kuncham Mahalakshmi, Kandula Sowmya Sri, Vanga Bhargavi, P. Sandhya, Neha A Padia, Venu Talla.	Sarojini Naidu Vanita Pharmacy Mahavidyalaya, Hyderabad	Comparative Evaluation Of Clinical Outcomes Of Dexmedetomidine Versus Without Dexmedetomidine In Surgical Field Of Otorhinolaryngology: A Prospective Study.
5	PPC 41	Asfiya Rasheed, Mandha Sravanthi	G Pulla Reddy College Of Pharmacy, Hyderabad, Telangana, India – 500028	Efficacy And Safety Of Azathioprine In Ibd: A Cross-Sectional Prospective Observational Study
6	PPC 47	Sivva Srujana	MNR College Of Pharmacy, sivva Srujana	Pharmacological And Phytochemical Screening Of Leaves Of Tridaxprocumbens For Its Arthritic Activity In Wistar Rats

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7	**PPC 48**	Ghooli Indu, Archana Jorige	RBVRR Women's College Of Pharmacy(Affiliated To Osmania University), Barkatpura, Hyderabad, Telangana State, India	Combination Of L Theanine And Vit D3 Alleviates Chronic Stress
8	**PPC 66**	Padg Lakshmi	Gokaraju Ranga Raju College Of Pharmacy	Neuro Protective Effect Of Citrus Sinensis Peel On Parkinson'S Associated With Depression In Haloperidol Induced Pd Rodents Model
9	**PPC 86**	Shailaja Ande [1], Kumar Shiva Gubbiyappa [2]*	[1] Deparment Of Pharmacology, Gitam School Of Pharmacy, Gitam Deemed To Be University, Vishakapatnam, Andhra Pradesh-530045. [2] Gitam School Of Pharmacy, Gitam Deemed To Be University, Rudraram, Patencharu, Sangareddy-502329.	Potential Ameliorative Effect Of Methanolic Fraction Of Morus Alba Leaf Extract On Alloxan-Induced Diabetic Cardiomyopathy Rat Models Via Suppressing Redox Imbalance And Inflammation.
10	**PPC 87**	Jyothi Papani*, Dr. M. Gangaraju, Dr. N. V. L. Suvarchala Reddy V.	Department Of Pharmacology, Gokaraju Rangaraju College Of Pharmacy, Bachupally, Hyderabad	Antihyperlipidemic And Hepatoprotective Activities Of Benincasa Hispida Transferosomes In High Fat Diet Induced Hyperlipidemia In Rodents
11	**PPC 88**	P.Rajyalakshmi devi*, Dr.M.Vinyas	*Department Of Pharmacology, Sarojini Naidu Vanitha Pharmacy Maha Vidyalaya Osmania University, Hyderbad Department Of Pharmacology, Gitam School Of Pharmacy, Hyderabad.	Comparative Antiobesity Activity Of Probiotics With Short-Chain Fatty Acids (Scfas) Through Glp 1 And Pyy Activity In High Fat Diet Induces Obesity In Rats
12	**PPC 78**	Varsha D, S Upriya E, Pavan Kumar E, Anitha E, Devik	Teegala Krishna Reddy College Of Pharmacy, Hyderabad	Evaluation Of Anti Depressant Activity By Polyherbal Extraction In Swiss Albino Mice.

C P B

Pharmacognosy / Phytochemistry / Biotechnology

CPB 1

HERBAL CREAMS AND SERUMS: NATURE'S ANTIMICROBIAL SKINCARE SOLUTION

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This study aimed to formulate and evaluate herbal creams and serums using ethanolic extracts from papaya leaf, moringa leaf, pashanbhed, orange peel, and neem leaf for topical treatment. Creams and serums containing 1% w/v ethanolic extracts of these ingredients were prepared and evaluated for physicochemical properties and in vitro antimicrobial activity against Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa, and Bacillus subtilis. All formulations met acceptable standards for pH, globule size, viscosity, and organoleptic properties, proving non-irritating to the skin over a three-week period and remained stable at room temperature with no microbial growth observed. The cream formulations exhibited significant inhibitory effects against E. coli and S. aureus, suggesting the potential of polyherbal formulations as effective antimicrobial skincare products, promoting natural and holistic skincare practices. These findings offer a foundation for further research into the dermatological and cosmetic applications of polyherbal formulations.

Keywords: Herbal creams, serums, ethanolic extracts, antimicrobial activity, skincare products.

CPB 2

POLYHERBAL FORMULATION FOR EVALUATION OF ANTHELMINTIC ACTIVITY

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The present study was done with the aim to investigate the anthelmintic activity of different herbs in polyherbal combination. The Polyherbal formulation contains Zingiber Officinale, Curcuma longa, Piper longum, Ficus Dalhousiae, and Terminalia chebula. Various concentrations of polyherbal formulation (50 mg/ml, 100 mg/ml and 200 mg/ml) in 50 ml of normal saline were taken. The results were compared with standard albendazole (10mg/ml) and control was taken as normal saline (0.9% NaCl). The results were expressed in terms of time in minutes for the paralysis and time of death of the worms. Paralysis and death time were analysed using one way ANOVA analysis using Graph pad prism 2.01 Software. The study indicates that polyherbal formulation shows potent anthelmintic activity.

Keywords: Polyherbal formulation, Curcuma longa, anthelmintic activity, Graph pad prism, albendazole.

CPB 3

ETHNOPHARMACOLOGY AND INDIGENOUS KNOWLEDGE

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Ethno pharmacology is the scientific study which shows how the different cultures use natural substances mainly plants for medicinal purposes. It provides a valuable framework for bridging traditional knowledge with contemporary scientific enquiry, fostering a holistic approach to health care. Indigenous knowledge forms the

backbone of ethno pharmacology. Ethno pharmacologists work with indigenous communities to document their traditional knowledge and to investigate the scientific basis for their medicinal practices. Ethno pharmacology also contributes to the development of new pharmaceutical products. Traditional medicinal practices have been tested and refined over centuries. Indigenous knowledge can provide new leads for drug. Ethno pharmacological research not only aims to authenticate and potentially integrate these traditional practices into modern medicine but also emphasizes the importance of preserving indigenous knowledge and respecting the cultural heritage of native communities.

Keywords: Ethno pharmacology, indigenous knowledge, traditional medicine, drug discovery, medicinal plants.

CPB 4

DENDRITIC-CELL-TARGETING VIRUS-LIKE PARTICLES AS POTENT MRNA VACCINE CARRIERS

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In 2020, the mRNA vaccine received clinical approval. Delivering mRNA directly to dendritic cells (DCs) in order to increase efficacy and prevent off-target damage is one area of future exploration. In this instance, the virus-like particles (VLPs) are created as a DC tropic mRNA vaccine vector and demonstrated the prophylactic benefits in infection modelsfor HSV-1 and SARS-CoV-2. Strong cytotoxic T cell immunity and a long-lasting antibody response with spike-specific antibodies that persisted for over nine months were produced by the VLP mRNA vaccination. Significantly, discovering the DC-targeting mRNA vaccination greatly increased the titer of antigen-specific IgG, shielding the hACE-2 mice from SARS- CoV-2 infection. This was made possible by our ability to target mRNA to DCs using pseudotyping VLP with modified Sindbis virus glycoprotein. Furthermore, we demonstrated that co-delivering DC-targeted mRNA vaccination shielded mice against HSV-1 infection.

Keywords: Dendritic cells, Virus-like particles, HSV-1, SARS-CoV-2, mRNA, Antigen- specific IgG.

CPB 5

GC-MS ANALYSIS AND ANTIOXIDANT ACTIVITY OF HYDRO-ALCOHOLIC EXTRACT OF COLOCASIA ESCULENTA (L.) SCHOTT LEAVES

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The study investigates the chemical composition and antioxidant properties of the hydro- alcoholic extract of Colocasia esculenta (L) Schott leaves, commonly known as taro, a plant extensively used in traditional medicine. The leaves were dried, powdered, and extracted using a Soxhlet apparatus with a hydro alcoholic solution (ethanol: water, 70:30). The resulting extract underwent analysis via Gas Chromatography-Mass Spectrometry (GC-MS), revealing a diverse array of bioactive compounds. To evaluate the antioxidant capacity, the extract was subjected to the DPPH (2,2-diphenyl-1-picrylhydrazyl) radical scavenging assay. The study demonstrates that the leaves of C.esculenta possess a significant number of bioactive compounds, as evidenced by the GC-MS analysis, which identified 50 distinct compounds. Notable identified compounds included hexadecanoic acid and octadecanoic acid which is renowned for their antioxidant properties. These findings underscore the therapeutic potential of C. esculenta leaves, supporting their use in traditional medicine and suggesting possible applications in modern therapeutic contexts. The presence of these compounds not only validates traditional practices but also opens avenues for the development of new treatments based on the plant's bioactive constituents. The hydroalcoholic extract exhibited significant antioxidant activity, with the DPPH assay revealing an IC 50 value comparable to that of ascorbic acid. Future research should aim to isolate these individual compounds to further investigate their specific biological activities. Thus, this study provides a foundational analysis that highlights the significant health potential of C. esculenta leaves, advocating for further detailed biochemical and pharmacological investigations.

Keywords: Colocasia esculenta (L.) Schott, GCMS, DPPH.

CPB 6

INTEGRATING AI WITH NANOMEDICINE FOR ENHANCED DRUG DELIVERY IN BRAIN CANCER THERAPY

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Brain malignancies are challenging to treat using traditional methods such as anticancer drugs, chemotherapy, and radiation surgery. These conventional treatments often have limited therapeutic efficiency due to the limitations of the blood-brain barrier, necessitating higher doses that can lead to cytotoxicity. Nanotechnology, a rapidly advancing field in biomedical engineering, offers the potential to optimize drug delivery in cancer therapy. Nanomedicine can overcome the blood-brain barrier and selectively bind to tumors, enabling targeted drug delivery that minimizes harm to healthy tissues and cells. Additionally, integrating artificial intelligence (AI) into drug delivery systems allows for personalized treatments with improved efficacy.This review aims to provide a comprehensive understanding of both traditional therapies and recent nanoparticle-based drug delivery systems for brain cancer treatment. It identifies the current clinical applications of AI in nanotechnology-led drug delivery for brain cancer patients, highlighting key advancements and challenges. Interdisciplinary research in this field has shown significant promise, particularly in enhancing the precision and effectiveness of treatments while reducing adverse effects. The synergistic application of nanotechnology and AI in drug delivery not only improves targeting accuracy but also offers new avenues for personalized medicine, ultimately aiming to enhance patient outcomes in brain cancer therapy.

Keywords: nanoparticles, artificial intelligence, biomarker, drug delivery, brain cancer, brain cancer therapy.

CPB 7

COMPARATIVE STUDY OF ANTIOXIDANT ACTIVITY OF INDIGENOUS PLANTS

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The use of herbal medicines has a long and documented history across the globe. Antioxidants are compounds that can prevent the damage to cells caused by free radicals. Free radical is a type of unstable molecule that is made during normal cell metabolism. Increased free radicals may cause diabetes, hypertension, neurodegenerative disesases, Cancer, Atherosclerosis etc. In this study we have selected Murraya koenigii (Rutaceae) and Nyctanthes arbor-tristis (Oleaceae) leaves for evaluation of Antioxidant potential. Murraya koenigii is used in treating piles, inflammation, itching, dysentery. The Nyctanthes arbor-tristis has popular medicinal use such as anti-helminthic, anti-pyretic, laxative, sedative. The leaves of the of plants were collected, washed, dried, powdered and was subjected for maceration using menthanol and acetone individually and in combination followed by Phytochemical screening. These were then evaluated for antioxidant activity by using DPPH scavenging method. The current study showed that the plants contain various secondary metabolites such as resins, tannins, glycosides, flavanoids, carbohydrates etc. and it is concluded that the methanolic extracts of combined leaves has shown significant antioxidant activity when compared to that of acetone extract. And it can be used as easily accessible source of natural antioxidant and as a possible food supplement or can be used in pharmaceutical industry.

Keywords: Antioxidants, Free radicals, Maceration, Secondary metabolites.

CPB 8

EXTRACTION AND CHARACTERIZATION OF MUSKMELON FRUIT RIND PECTIN

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Plant-based pectin is currently being promoted as a cost-effective and environmentally responsible solution. The focus of the current study is on using muskmelon fruit rind to produce bio-degradable polymer pectin. By using acid hydrolysis (Citric acid pH-2), pectin was extracted, and purification and clarification were the next

steps. The physicochemical parameters of the purified pectin, including its percentage yield, degree of esterification, swelling index, viscosity, FT-IR, SEM surface analysis were assessed. The percentage yield and degree of esterification from extracted pectin are 17.05% and 57±0.2% respectively. The viscosity investigations of muskmelon pectin revealed non-Newtonian pseudoplastic flow behavior. SEM morphological study revealed that the dried pectin from melon fruit rind has a smooth surface with little granules resembling mounds on it. Due to its high swelling property and high hydrophilic nature when it comes into contact with water are responsible for fast disintegration. In this study extracted pectin may be acting as superdisintegrating agent with in ranges of 0.4 to 4%.

Keywords: Muskmelon rind, Pectin, Bio-degradable polymer, FT-IR, SEM.

CPB 9

NANO-SIZED DRUG CARRIERS: EXTRAVASATION, INTRATUMORAL DISTRIBUTION, AND ITS MODELING

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Distribution of intra-tumoral has been demonstrated to be one of the most back breaking side of drug deliverance. There are various consequential biophysical barriers, such as towering interstitial pressure, increased diffusional distances, dense intracellular matrix, heterogenous blood flow, densely packed cells result in limited diffusion, and poor perfusion. Unfortunately, other capabilities are surpassed by distributional requirements. Fundamentally a drug is ineffectual if it doesn't reach its target site hence, developing various strategies to enable the drug to bind to the target-specific site to reduce all the undesired toxicities, and therefore magnify the drug's therapeutic efficacy. Thus, the development of nano-particle (size) based drug formulation where the intentional manipulation of the size, its surface characteristics for therapeutical ,and expansion in the drug deliverance is crucial and necessitate due to its small particulate size and large surface area, these drug nanoparticles show greater solubility and also intensify the bioavailability of the drug with their potency to cross the Blood-Brain-Barrier (BBB), and also enters into the pulmonary system and they can be absorbed into the skin cells tightly adhere to the endothelial cells for targeted and effective drug delivery. There are various strategies for improving the drug distribution to distinct solid tumors even though their mechanism remains in the dark till date. The tumors that are grown in vitro develop faster than that of the naturally developed cancer, these certainly affect the development of tumor blood vessel, organization of extracellular matrix may impact. In this review, resolving these difficulties with improving the methods and finding the strategies to improve the transportation and distribution.

Keywords: Intra-tumoral distribution, biophysical barriers, interstitial pressure, diffusional distances.

CPB 10

IN VITRO STUDIES ON ALPHA AMYLASE AND ALPHA GLUCOSIDASE INHIBITORY AND ANTIOXIDANT ACTIVITIES OF ERIOLAENA LUSHINGTONII DUNN

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Ayurvedic medicine in India uses the plant E.lushingtonii to treat a variety of ailments, including diabetes. The in vitro inhibitory activities of E.lushingtonii on alpha amylase and alpha glucosidase were assessed. To better control hyperglycemia in people with type 2 diabetes mellitus, alpha amylase and alpha glucosidase inhibitors are employed. The Soxhlet apparatus were used to extract the leaves of E. lushingtonii using a sequential process using petroleum ether, chloroform, ethyl acetate, and methanol. To conduc the α-amylase inhibition assay, the 3,5-dinitro salicylic acid, and α-glucosidase inhibition assay P-Nitrophenyl-α-D-glucopyranoside, technique were employed. The total phenolic content was determined using Folin-Ciocalteu reagent, and the antioxidant properties were assessed using the DPPH free radical scavenging activity. The α-amylase inhibitory activity of petroleum ether, methanol, ethyl acetate, and chloroform had IC50 values of 16.16 ± 2.23, 59.93 ± 0.25, 145.49 ± 4.86, and 214.85 ± 9.72 µg/ml, respectively. These values were comparable to those of

acarbose (18.63 ± 1. 21 (µg/ml)). The α-glucosidase inhibitory activity of petroleum ether, methanol, ethyl acetate, and chloroform had IC50 values of 18.25 ± 3.28, 56.44 ± 0.20, 125.36 ± 4.98, and 218.94 ± 10.62 µg/ml, respectively. These values were comparable to those of acarbose (20.8 ± 2.18 (µg/ml)). The maximum total phenolic content (34.62 ± 1.14 mg/g extract) and highest DPPH scavenging activity (IC50 = 249.92 ± 3.35 µg/ml) were found in methanol, which also exhibited the best antioxidant properties. The crude methanolic extract of E. lushingtonii leaf extracts demonstrates significant inhibitory effect against α-amylase and α-glucosidase. Therefore, it may be possible to employ E. lushingtonii leaves as a traditional antidiabetic medication. Additionally, it may be possible to isolate pure substances with anti-diabetic activity through additional research.

Keywords: Eriolaena lushingtonii, Malvaceae, Alpha amylase, Alpha glucosidase and Antioxidant.

CPB 11

SAFE AND EFFECTIVE: PAPAYA SEED-BASED MOSQUITO COIL FOR DISEASE PREVENTION

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The primary aim of our study was to develop a mosquito repellent insecticide coil utilizing Carica papaya seed extract. Papaya seed extract served as the main insecticidal component, complemented by other carefully selected ingredients such as activated charcoal, turmeric, and camphor, all meticulously balanced for optimal efficacy. Mosquito-borne diseases such as malaria, dengue, chikungunya, and West Nile fever pose significant threats to humans. While various mosquito repellents exist, they often come with adverse effects such as respiratory problems, allergies, and poisoning if ingested. Our endeavor aimed to mitigate these risks while offering potent protection against mosquito-borne illnesses. Carica papaya seeds contain carpain, an alkaloid known for its insecticidal properties. Our formulation leveraged this natural compound to disrupt mosquito metabolic processes, inhibit growth hormones, and induce larval mortality. Additionally, activated charcoal was incorporated to adsorb the noxious smoke generated during coil burning, thereby reducing respiratory discomfort and other associated health concerns. Our experiments revealed that the ethanolic extract of papaya seeds exhibited superior efficacy compared to its aqueous counterpart, achieving a mortality time within the standard threshold for mosquito repellent coils. This underscores the potency of our formulation in combatting mosquito populations effectively. Moving forward, further studies will be conducted to refine the formulation and assess its long-term safety and efficacy under real-world conditions.

Keywords: Papaya seed extract, alkaloid (carpaine), vector borne diseases.

CPB 12

DEVELOPMENT, CHARACTERIZATION AND IN VITRO EVALUATION OF HERBAL SUNSCREEN LOTION

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The growing concern over the adverse effects of synthetic chemicals in sunscreen formulations has gained interest in herbal alternatives. Natural substances extracted from plants have recently been considered as potential sunscreen resources owing to high ultraviolet ray absorption and antioxidant activity. The decrease in the intensity of UV radiation reaching the skin through sunscreens may reduce the risk of sun-induced skin cancer. This study aims to develop sunscreen lotions, possessing broad spectrum of anti UV-radiation using pomegranate peel extract, HPMC, cetyl alcohol, stearic acid, in varying concentrations for the preparation of sunscreen lotion. Pomegranate peel extract was selected as potential bioactive agents due to their phytochemical compositions possessing considerable content of polyphenolic compounds. Total 4 formulations were prepared and evaluated for homogeneity, Spreadability, pH, viscosity and SPF. From the present study, F3 formulation was proved to be stable and effective with high SPF when compared to other formulations.

Keywords: Sunscreen, pomegranate peel extract, HPMC, SPF

CPB 13

DEVELOPMENT, CHARACTERIZATION AND IN VITRO EVALUATION OF POLYHERBAL TOOTHPASTE

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There is currently a huge demand for herbal based products such as toothpaste. Consumers feel herbal toothpaste is safer, more effective, and less hazardous than synthetic toothpaste due to the use of less chemicals. A lot of dentists recommend toothpaste to treat issues including sensitivity and chronic gingivitis, tooth decay. As a result, the primary purpose of the current project is to prepare, test and compare lab made herbal toothpaste to commercial herbal toothpaste like Himalaya, miswak, and dent county. The herbal toothpaste was formulated using three herbal extracts namely oregano oil (origanum vulgare), wheat grass (Triticum aestivum), neem bark (Azadirachta indica) and tested against staphylococcus aureus, Escherichia coli and candida albicans with different concentrations. The considerable inhibition has been seen against staphylococcus aureus, Escherichia coli and candida albicans. The formulated toothpaste was also evaluated with the conventional physiochemical parameters and anti-microbial activity, anti-fungal activity. The formulated toothpaste showed potent inhibition against gram positive and gram-negative bacteria. Thereby, it opens a window for future study to enhance the ability of the toothpaste and to prove the efficacy and safety of the formulated toothpaste.

Keywords: Antimicrobial, Antifungal, Wheat grass, Neem bark, Oregano oil.

CPB 14

INSECTICIDAL ACTIVITY OF SAPINDUS EMARGINATUS

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Soapnuts (Sapindus emarginatus) is one of the commodities that is used daily by the human society without considering their side effects. In earlier days, women and men uses this soapnuts in the form of shampoos in order to avoid hair-fall and removal of dandruff. The Ethanolic extract of Sapindus emarginatus leaves were evaluated for its insecticidal activity. The dried leaves of Sapindus emarginatus were collected was finely powdered and extracted with ethanol. The dried extract was used against different insects to evaluate its insecticidal activity. It is found that the ethanolic extract of leaves of Sapindus emarginatus shows insecticidal activity.

Keywords: Sapindus emarginatus; Secondary metabolites; Phytochemicals; Biological activity.

CPB 15

EXTRACTION AND EVALUATION OF BIO WAX OBTAINED FROM DIFFERENT ORNAMENTAL PLANT LEAVES

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Bio-wax refers to a variety of waxes derived from plants and animal sources. Animal wax, obtained like beeswax, lanolin, or tallow, is widely used in industries such as cosmetics, pharmaceuticals, and food. It offers properties like emollience, stability, and viscosity control. The surface of Alocasia maquilingensis, Aglaonema commutatum,Pandanus veitechii, Vriesea gigantea, Ficus elastica, and Codiaeum variegatum leaves is covered with a layer of highly hydrophobic layer of bio-wax, so the main objective of the project was to isolate the bio wax layer of the leaves using organic solvent extraction method using chloroform and coat it on to the surface of fruits and to check the freshness of the fruit. The isolated bio-wax was subjected to various tests like, hydrophobicity test and melting point determination and confirmation of n-octacosanol by recording IR spectra. The wax confirmatory test resulted in turbidity and indicated the presence of wax. The hydrophobicity test showed the lotus effect indicating the presence of wax and also coated on Whatman filter paper showing the hydrophobic nature of wax. The contact angle of droplets of distilled water on the wax surfaces was found to be greater than 90 and this confirmed its hydrophobic property. The n-octacosanol presented was identified through FTIR. It was found that the apple coated with wax remained fresh for a long time and showed a longer life span when compared to the apple without coating.

Keywords: Bio-wax, Hydrophobicity.

CPB 16

NUTRACEUTICAL AS A MOSQUITO REPPELENT

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Nutraceutical has led to new era of medicine and health, in which the food industry has become a research-oriented sector. This thesis aims to provide knowledge of Nutraceuticals with its uses in various diseases. Limonene which is present in orange peels has cestrum. Limonene is a natural pesticide presents in orange peel which is efficient as mosquito repellent. It is used to make medicines. Limonene is used for obesity, cancer and bronchitis, but there is no good scientific evidence to support these. In this study, we prepared a mosquito repellent dhoop using orange peels, as orange peels are a rich source of essential oils including limonene, which has been found to have mosquito-repelling qualities. In foods, beverages and chewing gum, Limonene is using as flavoring agent. the potential of orange peels as a natural source of mosquito repellent and provides a simple and effective method for preparing a mosquito repellent dhoop.

Keywords: Nutraceutical, Limonene, Medicine, Obesity, Cancer, Bronchitis, Beverages

CPB 17

FORMULATION AND IN-VITRO EVALUATION OF OREGANO (ORIGANUM VULGARE) TOOTHPASTE

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Oregano toothpaste is a Novel toothpaste with antimicrobial and antifungal properties. Oral health is crucial for overall well-being. Current toothpaste has limitations, and natural alternative are sought. To develop and evaluate a toothpaste containing Oregano oil, Wheatgrass powder, Neem bark powder, and Egg shell powder (as a natural calcium carbonate) against staphylococcus aures. Escherichia coli, and candida albicans. Antimicrobial and anti-fungal activities were assessed using disk diffusion and broth microdilution assay. Oregano toothpaste showed significant inhibition against all tested microorganisms. Oral paste has a unique blend of natural ingredients demonstrates potent antimicrobial and antifungal activity, making it a promising alternative to conventional toothpaste. The formulated toothpaste was evaluated with conventional physiochemical parameters. Oregano toothpaste has the potential to revolutionize oral care with its natural and effective. Oregano toothpaste offers a safe, effective, and innovative solution for oral care. Thereby, it opens a window for future study to enhance the ability of toothpaste and to prove efficacy and safety of the oregano toothpaste.

Keywords: Antimicrobial, Antifungal, Wheat grass, Neem bark, Oregano oil.

CPB 18

FORMULATION AND EVALUATION OF POLYHERBAL FACE TONER

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Herbal toners in skincare includes benefits such as balancing the skin's pH, tightening pores, and providing a refreshing sensation. They are often used to remove traces of makeup and dirt, leaving the skin feeling rejuvenated. Herbal toners are considered a natural and gentle option for various skin types. Herbal materials work harmoniously with the human body, providing essential nutrients and beneficial minerals without adverse effects. The study has aimed to developed an effective herbal toner using natural extract known for skin beneficial properties. Various formulation was created by combining the specific herbal extract. Lemon grass extract, Aloe Vera juice, Tomato juice, Sandalwood oil and Rose water. Parameter such as organoleptic property, Surface tension, Viscosity, pH, skin irritation, was assessed to determine the optimal formulation. The result highlighted a promising formulation with notable skin friendly attributes, suggesting its potential as a natural alternative in the skin care industry. Antimicrobial activity was performed and all the formulations as showed antimicrobial activity against different bacteria and fungi.

Keywords: Lemon grass extract, Aloe Vera juice, Organoleptic property, Antimicrobial activity.

CPB 19

THUNBERGIA ALATA AND TABERNAEMONTANA CORONARIA - PHYTOCHEMICAL INVESTIGATION AND ANTIOXIDANT ACTIVITY

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The current investigation is aimed to determine phenolic, flavonoid content and the antioxidant activity of Thunbergia alata and Tabernaemontana coronaria leaves. Thunbergia alata leaves are five nerved, simple with an entire margin and opposite arrangement. Tabernaemontana coronaria consists of shiny dark green leaves with wavy margins. Polyphenolics such as tannins and flavonoids are proven as powerful antioxidants and antiseptic agents to treat skin infections. Total phenolic content was estimated by Folin–Ciocalteu colorimetric method taking gallic acid as standard. Whereas total flavonoid content was determined by Aluminum chloride colorimetric assay using Rutin as standard. The absorbance was measured at 760 nm and 510 nm, respectively. Antioxidant activity was measured by two In vitro methods (DPPH and NO free radical scavenging assay) using standard protocols, where Ascorbic acid served as a reference standard. To conclude, it is clear from the results that Tabernaemontana coronaria is rich in phenols and flavonoids and can be correlated to the high antioxidant activity observed in both methods. Results disclosed that in DPPH assay, ethanol extract of Tabernaemontana coronaria. (72.37%) is more effective to inhibit the free radicals than Thunbergia alata (61.72%) with IC50 values 50.06µg/ml & 74.77µg/ml respectively. Similarly, in NO free radical scavenging assay, ethanol extract of Tabernaemontana coronaria (75.37%) stood best among all to scavenge the free radicals with IC50 values 47.15µg/ml.

Keywords: Thunbergia alata, Tabernaemontana coronaria, antioxidant, total phenolic content,total flavonoid content, free radical scavenging, extraction.

CPB 20

EVALUATION OF ANTI OXIDANTACTIVITY OF FLOWER EXTRACTS OF WHITETOP WEED

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Synthetic drugs are potentially toxic and are not free from side effects on the host. Therefore an attempt has been made to study the antioxidant activity of plants. As plants and plant-based drugs are less toxic and have acceptable side effects, hence in the present study the crude extracts of leaf of Parthenium hysterophorus L were selected to study antioxidant activity. The research works which were carried out during the past were mainly based on the control and elimination of this weed due to its noxious effect. In the present work the ethanolic flower extract was extracted by using soxhlet apparatus. Phytochemical screening was carried out qualitatively by color reactions with different reagents. The Phytochemical screening revealed the presence of flavonoids, alkaloids, glycosides, Terpenoids, tannins, saponins, cardiac glycosides and carbohydrates. The antioxidant scavenging activity of this flower extract was determined by applying two different assay methods: (1) DPPH (1, 1-diphenyl-2-picryl hydrazyl) free radical method. (2) Hydrogen peroxide assay. The ethanolic extract showed the good antioxidant activity with IC50 value of 97.2 µg/ml in DPPH method and with IC50 value of 57.2 µg/ml in Hydrogen peroxide assay method. This study can be basis for the further research to find out more detail information regarding the relationship between antioxidant activity and other quantitative phytochemical content which may help to highlight the chemicals which are responsible for this activity.

Keywords: Parthenium hysterophorus, antioxidant activity, DPPH free radical scavenging method, Hydrogen peroxide.

CPB 21

GREEN SYNTHESIS OF COPPER NANOPARTICLES AND ITS CHARACTERIZATION

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Researchers are becoming interested in green nanotechnology as a means of synthesising nanoparticles in a straightforward, economical, environmentally benign, and less toxic way. The current investigation describes the biosynthesis of copper nanoparticles using Ocimum sanctum leaf extract. When copper sulphate solution is added, the Ocimum leaf extract changes colour, signifying the presence of copper nanoparticles. It was observed how the incubation period and temperature affected the biosynthesis of Cu NP. Fourier transform infrared spectroscopy (FTIR), X-ray diffraction (XRD), and a UV Vis spectrophotometer were used to characterise the biosynthesized copper nanoparticle.

Keywords: FTIR, UV-Visible spectroscopy, X-ray diffraction, Cu NP, nanoparticles, and XRD.

CPB 22

FORMULATION AND EVALUATION OF ORGANIC HAIR DYE

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The aim of study is to formulate and evaluate the organic hair dye using the plant materials. The main ingredient is Indian black berry (Syzygium cumine) and onion peel ash (Alium cepa). The plant materials were obtained by the infusion process using the aqueous solvent. The phytochemical analysis of plant materials extract was done. The formulation of organic hair dye shown a good stability study, non-irritancy, pH, dyeing effect, spreadability, washability and further evaluations during this study period. The formulation has maintained it storage conditions for further process of tests. The dye formulation produces black colour dyeing on the application of human volunteers' hair. The result shows that the effect of colour is obtained by the given formulation is stronger and perfect combination.

Key words: Syzygium cumine, Alium cepa, pH, Stability, Dyeing effect.

CPB 23

PRODUCTION OF NATURAL FUEL BIOETHANOL FROM FRUITS AND VEGETABLES

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Food waste must be recycled as it causes a global hazard to the environment. The biomass produced by fruits and vegetables can be used as a renewable energy source to produce steam, electricity, human consumption fuel, and laboratory solvents. Bioethanol, which comes from biomass, makes up 10–14% of the world's energy supply and solves global warming and the depletion of fossil fuels. Global energy demand is increasing, and soon there will be a global scarcity. The two major challenges facing the world today are meeting the increasing need for energy and reducing pollution, contributed by the combustion of diesel or petroleum, or by both wastes from food over the globe that need to be recycled because it is hazardous to the environment. Bioethanol, produced from the waste mass of fruits and vegetables, has been considered a significant renewable fuel that may partly substitute for fossil fuels. Consumable resources like sugar and starch produce 80% of the bioethanol. Fruit and vegetable waste with high sugar content can be used as a raw material for bioethanol production by fermentation using Saccharomyces cerevisiae. Fruit and vegetable biomass is a significant source of renewable energy and bioethanol produced from this biomass accounts for 10% to 14% of global energy production. The objective of this review is to address the processes used to produce bioethanol from the biomass of waste fruits and vegetables, as well as its advantages, properties, and possible uses in several sectors.

Keywords: food waste, bioethanol, fruits, vegetables.

LIST OF ABSTRACTS SELECTED FOR ORAL PRESENTATIONS IN CPB

S.NO	CODE	NAME OF CANDIDATES	COLLEGE NAME	TOPIC
1	CPB 1	Pragada Harshini	Sri Venkateshwara College of Pharmacy, Hyderabad	Herbal Creams and Serums: Nature's Antimicrobial Skincare Solution
2	CPB 2	Sara Hussain*, Mohammad Shamim Qureshi, and Lubna Nousheen.	Anwarul Uloom College of Pharmacy, New Mallepally, Hyderabad, Telangana, India.	Polyherbal Formulation for Evaluation of Anthelmintic Activity
3	CPB 8	Thakur. Rekhabai and R.Santosh Kumar	GITAM School of Pharmacy., GITAM (Deemed to be University), Rushikonda, Visakhapatnam, A.P, India	Extraction And Characterization Of Muskmelon Fruit Rind Pectin

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