ONE DAY

NATIONAL SEMINAR ON

RECENT ADVANCES IN DRUG DISCOVERY, RESEARCH AND CLINICAL TRIALS (RADDRCT-2024)

17th August, 2024

SOUVENIR

Organized By

Department of Pharmacognosy

KVSR SIDDHARTHA COLLEGE OF PHARMACEUTICAL SCIENCES

(AUTONOMOUS)

Siddhartha Nagar, Vijayawada - 520010, A.P. INDIA

Approved AICTE, PCI, New Delhi , Govt. of A.P.

Accredited by NAAC with 'A' Grade

www.kvsrsiddharthapharma.edu.in

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DR. PINNAMANENI SIDDHARTHA INSTITUTE OF MEDICAL SCIENCES & RESEARCH FOUNDATION

(Sponsors: Siddhartha Academy of General & Technical Education (SAGTE), Vijayawada)

Dr. C. Nageswara Rao

MS, FRCSC, FACS

Diplomate in American Board of Urology

President, SAGTE

Director General, Dr. Pinnamaneni SIMS

Date: 16th Aug 24

The science and practice of Pharmacy has come a long way from extempore dispensing to manufacture of recombinant DNA technology-based products. With the world seeking solace in natural products for all remedies, the pharmacists today are hard pressed to find ethical solutions to all disease challenges. The growth of Indian pharmaceutical industry is unmatched and currently it is supplying medicines to more than 214 countries of the world. On the other hand, the world is looking at India for medical tourism.

We at KVSR Siddhartha college of Pharmaceutical Sciences are committed to produce quality graduates who can match the requirements of industry, hospitals, academia and regulatory bodies. Emphasis is laid on the overall development of a student through industrial visits, hospital training and industrial training. Co-curricular activities like National Pharmacy Week, World Pharmacist Day and games/sports activities form an integral part of academic calendar. Students are exposed to seminars/conferences in addition to routine classroom teaching. We provide a friendly and supportive learning environment where active discussion, investigation, critical and lateral thinking can flourish with the exchange of unique ideas.

All the best for the upcoming one day national seminar on "Recent advances in drug discovery, research and clinical trials"

Signature

Dr. C. Nageswara Rao

President

SAGTE

Cinna Avutapalli, Gannavaram Mandal, Krishna District - 521 286

Phone (O) : +91 8676 256611, Email : c_nageswararao@yahoo.com

Telephone : 0866 2476026, 2475866, 2479781
Tele-Fax : 091 - 866 - 2476088
e-mail : siddhartha.academy@yahoo.in

Siddhartha Academy of General & Technical Education

SIDDHARTHA NAGAR, VIJAYAWADA - 520 010

Date :

During last decade, pharmaceutical industry underwent a complete transformation due to liberalization, globalization, emerging GATT era and then India becoming a member of WTO coupled with major shift in Governments economic policy. All these events led to severe competition, demand of high-quality standards of drugs and pharmaceuticals, introduction of new generation of drugs, emerging biotechnological methods for the production of extremely efficacious drugs. Therefore, our goal is to produce a workforce of pharmaceutical technologists who will be globally acceptable for their technological skills, their quality of work and a habit of hard work. We are proud to have sound academic and well experienced faculty. The institute provides excellent learning environment with 100% placement assistance facilities. The topic chosen for the seminar is very significant. I wish grand success of one day seminar and convey my heartiest congratulations to the organizing committee for organizing such a wonderful seminar

All the best for the upcoming **one-day national seminar on "Recent advances in drug discovery, research and clinical trials"**

Signature
Sri. P. Lakshmana Rao
Secretary
SAGTE

Kommareddy Venkata Sadasiva Rao
Siddhartha College of Pharmaceutical Sciences
(AUTONOMOUS)

Tel: 0866- 2479775
0866- 249334

Pinnamaneni Polyclinic Road, Siddhartha Nagar, Vijayawada - 520010, AP, INDIA
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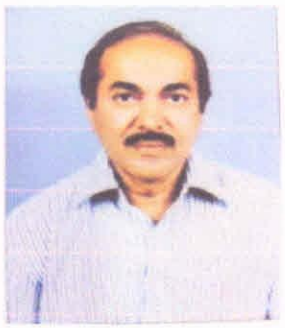
E-mail:kvsrsiddharthapharma@gmail.com Web: www.kvsrsiddharthapharma.edu.in



I am extremely glad to learn that a National Seminar on **"Recent advances in Drug Discovery, Research and Clinical trials"** is being organized by the department of Pharmacognosy, KVSR SCOPS.

I appreciate the organizers choice of the topic which is highly appropriate. I sincerely hope that the seminar would contribute towards finding those new areas of applications and encourage new generation to pursue such a scientific endeavour. I extend warm greetings to the principal and organizing committee and wish them great success in hosting, arranging the present seminar. I wish grand success of one day seminar and convey my heartiest congratulations to the organizing committee for organizing such a wonderful seminar

Signature
Sri. Ch. Arun Kumar
Convenor
KVSR SCOPS

The Indian Pharmaceutical Association (IPA)

(Society Regn No. Bom. 10 of 1960 GBBSD • Public Trust Regn. No. F- 746 (Bom) dt. 4.4.1960)

Kalina, Santacruz (East), Mumbai - 400 098. India • Tel.: +91 22 2667 1072 • Telefax : +91 22 2667 0744

E-mail : ipacentre@ipapharma.org • Website : http://www.ipapharma.org

MISSION

The Indian Pharmaceutical Association (IPA) is the national professional body of pharmacists engaged in various facets of the profession of pharmacy. The IPA is commited to promote the highest professional and ethical standards of pharmacy, focus the image of pharmacists as competent healthcare professionals, sensitize the community, government and others on vital professional issues and support pharmaceutical education and sciences in all aspects

Message from the President of the Indian Pharmaceutical Association

Dear Colleagues and Esteemed Guests,

It gives me immense pleasure to address this gathering at the National Seminar on "**Recent Advances in Drug Discovery Research and Clinical Trials**," organized by KVSR Siddhartha College of Pharmaceutical Sciences under the esteemed guidance of Principal Dr. Suneetha Achanti.

In today's rapidly evolving pharmaceutical landscape, innovation in drug discovery and the execution of robust clinical trials are more crucial than ever. As we navigate the complexities of global health challenges, the need for cutting-edge research and effective therapeutic solutions is paramount. This seminar serves as a vital platform for fostering dialogue, collaboration, and innovation among researchers, clinicians, and industry professionals.

I commend KVSR Siddhartha College of Pharmaceutical Sciences for its commitment to advancing pharmaceutical education and research. The college's dedication to nurturing future leaders in our field is truly commendable, and events like this seminar play a pivotal role in bridging the gap between academia and industry.

I urge all participants to engage actively in the discussions, share your insights, and collaborate on ideas that can lead to transformative advancements in our field. It is through our collective efforts that we can drive meaningful progress and improve the health and well-being of communities worldwide.

On behalf of the Indian Pharmaceutical Association, I extend my best wishes for a successful seminar and look forward to the groundbreaking discussions that will undoubtedly emerge from this gathering.

Thank you.
Warm regards,

Prof. T.V. Narayana
National President
Indian Pharmaceutical Association

Phone : 73820 08494
Fax : 0863 -2350343

CHEBROLU HANUMAIAH INSTITUTE OF PHARMACEUTICAL SCIENCES

Chandramoulipuram, Chowdavaram, Guntur - 522 019, Andhra Pradesh.
(Sponsored by Nagarjuna Education Society)
Approved by AICTE & PCI, Affliated to Acharya Nagarjuna University.
Recognised by Govt. of Andhra Pradesh, An ISO 9001:2015 Certified Institute
Mail : chipsguntur@gmail.com www.chips.ac.in
Accredited by NAAC

Date :.....12/08/2024.....

Dear Participants and Distinguished Guests,

It is my great honor to address you all at this National Seminar on **"Recent Advances in Drug Discovery Research and Clinical Trials"** to be organised by KVSR Siddhartha College of Pharmaceutical Sciences under the dynamic leadership of Principal Dr. Suneetha Achanti.

The field of Pharmaceutical Sciences is witnessing transformative changes, with new breakthroughs in Drug Discovery and Innovations in Clinical Trial Methodologies that are shaping the future of Healthcare. This seminar provides a crucial platform for knowledge exchange and collaboration among Researchers, Practitioners, and Industry experts committed to driving progress in this dynamic field.

I applaud KVSR Siddhartha College of Pharmaceutical Sciences for organizing this seminar and for its dedication to fostering an environment that promotes Research and Development. The college has consistently been at the forefront of Pharmaceutical Education and events like this are a testament to its role in empowering future leaders and innovators.

I encourage all participants to utilize this opportunity to share your knowledge, engage with peers, and explore new ideas that can lead to impactful advancements in drug development and patient care. Our collective efforts are vital in addressing the global health challenges we face today and in the future.

On behalf of the Indian Pharmaceutical Association and as the Principal and Professor of Chebrolu institute of Pharmaceutical Sciences, I wish you all a productive and inspiring seminar. I am confident that the discussions and collaborations arising from this event will contribute significantly to our shared goals of advancing Pharmaceutical Sciences.

Thank you.

With best wishes,

Dr. S. Vidyadhara
Professor and Principal,
CHIPS
&
Chairman,
IPA, Education Division

Kommareddy Venkata Sadasiva Rao
Siddhartha College of Pharmaceutical Sciences
(AUTONOMOUS)

Tel: 0866- 2479775
0866- 249334

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E-mail:kvsrsiddharthapharma@gmail.com Web: www.kvsrsiddharthapharma.edu.in

Dear Colleagues, Scholars, and Esteemed Guests,

It is with great pride and enthusiasm that I welcome you to the National Seminar on "**Recent Advances in Drug Discovery Research and Clinical Trials**" hosted by Department of Pharmacognosy, KVSR Siddhartha College of Pharmaceutical Sciences. This seminar marks a significant milestone in our ongoing efforts to bridge the gap between academic research and practical applications in the pharmaceutical industry.

In recent years, the landscape of drug discovery and clinical trials has undergone remarkable changes, driven by technological advancements and a deeper understanding of disease mechanisms. This event aims to provide a dynamic platform for researchers, academicians, and industry professionals to share their knowledge, discuss innovative ideas, and collaborate on solutions that will advance the field of pharmaceuticals.

I extend my sincere gratitude to all the speakers and participants who have come together to contribute their expertise and insights to this seminar. Your active participation is crucial in fostering a collaborative environment that can lead to groundbreaking advancements in drug development and patient care.

I would also like to express my appreciation to organizing committee, faculty, and students of KVSR Siddhartha College of Pharmaceutical Sciences for their hard work and dedication in making this seminar a reality. Your efforts ensure that our college continues to be a beacon of excellence in pharmaceutical education and research.

I am confident that the discussions and collaborations that emerge from this seminar will not only enrich our understanding but also inspire innovative solutions to the challenges facing the pharmaceutical industry today.

Thank you all for being a part of this important event. I wish you a fruitful and engaging seminar experience.

Warm regards,

Dr. A. Suneetha
Principal, KVSR Siddhartha College of Pharmaceutical Sciences

CDSCO

सत्यमेव जयते

टेलीफोन/Telephone: 040-23811481
फैक्स/Fax: 040-23811483
ईमेल/email:hyderabad@cdsco.nic.in

भारतसरकार / Government of India
केंद्रीयऔषधमानकनियंत्रणसंगठन/ Central Drugs Standard Control Organization
आंचलिककार्यालय, सी. डी. एस. सी. ओ.भवन, हैदराबाद / Zonal Office, CDSCO BHAVAN, Hyderabad,
स्वास्थ्यएवंपरिवारकल्याणमंत्रालय/ Ministry of Health & Family Welfare,
स्वास्थ्यसेवामहानिदेशालय/ Directorate General of Health Services,
एस.आर. नगर, हैदराबाद- ५०००३८/ S.R. Nagar, Hyderabad - 500038.
Certified for IMS (ISO-9001:2015, ISO-14001:2015, ISO 45001:2018)

Date: 08.08.2024

Dear Delegates,

It gives me immense pleasure to express my sincere gratitude to Prof. A. Sunitha, Program Co-ordinator, Principal-KVSR and Dr.A.Karuna Sree, Organising Secretary, for conducting one day National Seminar on ***Recent Advances In Drug Discovery Research And Clinical Trails*** to be organised by Department of Pharmacognosy , KVSR Siddhartha College of pharmacy.

This seminar is highly useful to the various pharmacists, Industry representatives engaged with Drug Discovery, Research & Its Clinical Development in human beings for various New Chemical Entities to ensure its safety and efficacy as per applicable Indian Regulations to boost innovations. The organizing committee has identified eminent speakers for the benefit of academia, industry and regulatory fraternity to assure quality medical products.

I encourage all participants, student delegates, distinguished participants and special invitees to utilise this opportunity to share your expertise and knowledge followed by new ideas for drug development to achieve patient centric effects in Hospital/ Clinical settings.

I wish this event would be grand success.

08.8.2024.

डॉ. ए.रामकिशन
Dr. A. RAMKISHAN
उप औषधि नियंत्रक (भारत)
Dy. Drugs Controller (India)
के.औ.मा.सं., आंचलिक कार्यालय, हैदराबाद-३८
C.D.S.C.O., Zonal Office, Hyderabad-38

Date: 14 Aug 2024

Dear Esteemed Pharma Professionals and Delegates.

I am deeply honored and grateful for the opportunity to speak in the One Day National Seminar on **"Recent Advances in Drug Discovery, Research, and Clinical Trials."** It has been a privilege to share insights into the transformative progress we are witnessing in this dynamic field.

The science and practice of Pharmacy has come a long way from extempore dispensing to manufacture of recombinant DNA technology-based products. With the world seeking solace in natural products for all remedies, the pharmacists today are hard pressed to find ethical solutions to all disease challenges. The growth of Indian Pharmaceutical industry is unmatched and currently it is supplying medicines to more than 214 countries of the world. On the other hand, the world is looking at India for medical tourism.

The advancements in drug discovery and clinical research hold the promise of significant improvements in patient care and treatment outcomes. It is through such engagements and shared knowledge that we continue to drive innovation and make a meaningful impact on global health.

I extend my heartfelt thanks to the Program Co-ordinator & Principal Prof.A.Suneetha and Organizing Secretary Dr.V.Karuna Sree HOD Department of Pharmacognosy for their warm welcome and for creating a platform where we can come together to explore and discuss these ground breaking developments. Your commitment to fostering dialogue and collaboration is truly commendable.

I extend my warm greetings and wish this scientific event a grand success.

Best Regards,

HETERO LABS LIMITED
Hetero Corporate
Hyderabad-18

Dr. Y Sridhar Reddy,
Vice President,
Clinical Development and Medical Affairs,
Global Head – Pharmacovigilance,
Hetero Group of Companies.

Kommareddy Venkata Sadasiva Rao
Siddhartha College of Pharmaceutical Sciences
(AUTONOMOUS)

Tel: 0866- 2479775
0866- 2493347

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Dear Colleagues, Scholars and Esteemed guests

On behalf of The Department of Pharmacognosy, KVSR Siddhartha College of Pharmaceutical Sciences, I extend a warm welcome to all the delegates to the **one day National Seminar on "Recent advances in Drug Discovery, Research and Clinical Trials"**

At KVSR Siddhartha College of Pharmaceutical Sciences, we are dedicated to producing high quality pharmacy professionals. We focus on the comprehensive development of our students. Our learning environment is supportive and collaborative.

The field of Pharmacognosy plays a vital role in drug research by contributing to various stages of the drug discovery and development process. It contributes to drug research by discovering and developing new therapeutic agents, understanding their mechanisms, ensuring their safety and efficacy, and integrating traditional knowledge with modern scientific techniques. The Department of Pharmacognosy, KVSRSCOPS is engaged in Herbal research and is equipped with a Digital medicinal garden.

I look forward to work with our Resource persons, invitees, students, faculty members and alumni to provide a congenial and comfortable learning environment.

Best wishes and regards

Dr.V.Karuna Sree 16/8/2024
HOD Department of Pharmacognosy
KVSR Siddhartha College of Pharmaceutical Sciences.

Siddhartha College of Pharmaceutical Sciences * K V S R * VIJAYAWADA 520 010

Associate Professor & HOD
Department of Pharmacognosy
KVSR Siddhartha College of
Pharmaceutical Sciences
Vijayawada - 520 010

A National Seminar

"Recent Advances in Drug Discovery Research and Clinical Trials"

Committee List

S.No	Name of the Committee	Name of the Staff	Responsibilities
1.	Executive Committee	1. Dr. A.Suneetha 2. Dr. V.Karuna Sree	● Strategic Planning ● Decision Making
2.	Inauguration Committee	1. Dr.D.Jyothirmayee 2. Dr.M.Vijaya lakshmi 3. Dr.P.Swetha 4. Mrs. V.Indumathi 5. Mrs. J.Nagalaxmi **Student Co-ordinators** 1. Miss T .sushmitha 2. Miss T.Varshini 3. Miss Ch.Abhinaya & Group 4. Mr.J.David 5. Mr.K.Revanth	● Online registration verification ● Stage Decoration & Management ● Lighting of the lamp ● Prayer song & Anchoring
3.	Registration &Reception Committee	1. Dr.A.Bharathi 2. Dr.T.Sarala Devi 3. Mrs. R.Anusha 4. Miss.R.Triveni 5. Miss.A.Sowjanya **Student Co-ordinators** 1. Mr.Salar.Md 2. Mr.Bhanu Vishnav Sai 3. Miss D,Sree Ashmika 4. Miss P.Sandya	● Provide Registration forms ● Spot Registration ● Supplies (folders. pens. scrupling pads) ● Payment Receipts ● Provide Food Coupons
4.	Guest accompanying Committee	1. Dr. A.Suneetha 2. Dr V.Karuna sree 3. Dr G.Ramana 4. Dr G.Vijaya Kumar	● Receiving Resource Persons ● Arranging Accommodation &Transportation
5.	Purchase Committee	1. Dr G.Ramana 2 Dr.Ch.Nagabhushanam 3.Mr.P.Vinay Sekhar **Student Co-ordinators** Mr.A.chaithanya Reddy Mr. R.Chandhan	● All Purchases Regarding Seminar Badges,Momentous, Folders,Pens,Scribling pads,Prizes Welcome & Back Drop Banners,saplings etc…
6.	Food Committee	1. Dr. V.Karuna Sree 2. Dr G.Vijaya Kumar 3. Mr.K.Anil Kumar 4. Mr.P.Srinivasu	● Over See the arrangements for lunch & snacks
7.	Scientific Session Committee	**1. Pharmaceutics** Dr.T.P.Rao Dr .Arifa Begam **2. Pharmaceutical Analysis** Dr.M.Vijaya lakshmi	

		Mrs.K.Jyothi Miss. T.S.Mrinalini **3. Pharmaceutical Chemistry** Dr. B. Anupama Mr.Durga Prasad Mrs.Sk.Jareena Dr.V.Narendra 4. **Pharmacology** Mrs.O.Iswarya Mr.A.V.S Ravi Sainath Mrs. J. Jyothirmayee **5. Pharmacognosy** Dr.P.Swetha **6. Pharmacy Practice** Mrs.Sireesha Mrs. SPranathi **Student Co-ordinators** Miss K.Hari Priya Miss G.Manisha Miss A.Bhaya Shree	● Evaluation of e-posters from the concern Departments
8.	Certificate & prize Distribution Committee	1. Dr.N.KanakaDurga 2. Dr K.Ravi Shenkar 3. Mrs.A.Lakshmi Pavani 4. Miss.SLS.Mounika Pratyusha 5. Mrs.K.Pradeepthi 6. Mrs.P.Lakshmi Prasanna **Student Co-ordinators** Mr.S.Pranav Sai Miss D.Keerthi Mrs.P.Akanksha	● Organize Valedictory Session ● Distribution of Prizes & awards to winners

Department Of Pharmaceutical Analysis (SPA)

Department of Pharmacognosy (SPG)

Department of Pharmacy Practice (SPP)

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Organized By

The Department of Pharmacognosy

SPB001

EMULGEL: A New Approach for Enhanced Topical Drug Delivery

Pranav Sai Suragani*, K. Ravi Shankar and R. Anusha

Department of Pharmaceutics and Biotechnology

KVSR Siddhartha College of Pharmaceutical Sciences, Vijayawada, AP

ABSTRACT

Topical drug delivery refers to the distribution of pharmaceuticals through the skin, vaginal, ophthalmic, or rectal channels. Drugs might be provided for local or systemic effects. Topical formulations having different physicochemical properties such as solid, semisolid, or liquid, can be created. A medication emulsion is prepared and mixed with an emulgel to form the topical system. Emulgel is a thermodynamically stable formulation with low interfacial tension formed by mixing a surfactant and a co-surfactant. It has numerous features, including enhanced permeability and strong thermodynamic stability. Emulgel features both dual control and a continuous release pattern. Emulgel enhances bioavailability and patient compliance. The pH, viscosity, particle size, zeta potential, drug content, stability study, skin irritation test, and other properties of the prepared formulation are evaluated.

Key Words: Emulgel, Topical drug delivery, Emulsion, Thermodynamically stable

SPB002

Evaluating the Biological Potential of Alternanthera Sessilis Methanolic Extract: Antioxidant, Anti-Inflammatory, and Neurodegenerative Disease Management

D.Jyothirmayee*, Shaik. Karishma kowsar .

Department of Pharmaceutics and Biotechnology,

KVSR Siddhartha College of Pharmaceutical Sciences, Vijayawada, AP

ABSTRACT

The present investigation was commenced with the objective of enhancing the bioavailability of *Alternanathera sissilis* (ALT), leaf extract for its antioxidant, anti-inflammatory, and neurodegenerative disease management activities through the preparation of liposomes. Liposomes of ALT were prepared using excipients such as naturally derived phospholipids egg lecithin (Phosphotidyl ethanolamine), Fluidity and stability modulator cholesterol and Organic solvent n-butanol to assure a homogeneous mixture of lipids, Hydrophilic vehicle, pH 7.4 buffer.

Key Words: *Alternanathera sissilis* (ALT), antioxidant, anti-inflammatory

SPB003

Formulation and Evaluation of Docetaxel Floating Microspheres

Bharathi Arigela , Mani Sai Raja Sri Nitish Jillella

Department of Pharmaceutics and Biotechnology

KVSR Siddhartha College of Pharmaceutical Sciences, Vijayawada, AP

ABSTRACT

The present study has been a satisfactory attempt to formulate floating microspheres of Docetaxel, a new anti-mitotic chemotherapy medication used mainly for the treatment of breast, ovarian and non-small cell lung cancer. From the experimental results it can be concluded that, FT-IR study shows no significant shifting of the peaks therefore it confirms the short term stability of the drug in the beads. Biocompatible polymers like can be chitosan and albumin used to formulate microspheres. Good percentage drug entrapment and practical yields were obtained with both the polymers. The flow properties of all formulations were within the acceptable range and therefore they could be easily filled into capsules. Cumulative percentage drug release significantly decreased with increase in polymer concentration. The overall curve fitting into various mathematical models was found to be on an average. The formulations D7 i s best fitted into First order kinetic model and Higuchi model. Thus, the formulated microspheres seem to be a potential candidate as an oral controlled drug delivery system in prolonging the drug release and increasing the bioavailability of drug.

Key Words: Docetaxel, FT-IR, Microspheres, Bioavailability, Anti-mitotic, Chitosan, Albumin, Gelatin.

SPB004

Artificial Intelligence: How Is It Changing Medical Sciences and Its Future?

Konduru Siromani*, Mattapalli Navya and Chandu Babu Rao

Department of Pharmaceutics and Biotechnology ,Priyadarshini Institute of Pharmaceutical Education and Research, Guntur, AP

ABSTRACT

Artificially intelligent computer systems are widely used in medical sciences. Common uses include patient diagnosis, end-to-end drug discovery and development, improved physician- patient communication, transcription of medical documents such as prescriptions, and remote patient treatment. While computer systems frequently outperform people in terms of task execution, cutting-edge computer algorithms have lately attained accuracies comparable to human experts in the field of medical science. Some believe that humans will eventually be entirely supplanted in certain jobs in the medical sciences. The purpose of this essay is to analyze the ways in which artificial intelligence is altering the landscape of medical science and to distinguish hype from reality.

Key Words: Artificial intelligence, medical use, drug discovery

SPB005

Current Trends in Polymer Micro Needle for Transdermal Drug Delivery

Golla Kiran *, Kamme Jaya Krishna and Budagala Gayathri

Priyadarshini Institute of Pharmaceutical Education and Research, Guntur, AP

ABSTRACT

TDD is a painless method of delivering drugs systemically by applying a medication formulation onto intact and healthy skin .The drug firstly penetrates through the stratum corneum and then passes through the epidermis and dermis without drug accumulation in the dermal layer. Drug delivery through the skin offers many advantages such as avoidance of hepatic first-pass metabolism, maintenance of steady plasma concentration, safety, and compliance over oral or parenteral pathway Microneedle transdermal drug delivery addresses the problems linked to oral delivery and to relieve the discomfort of patients associated with injections to increase patient compliance. Polymeric microneedle arrays present an improved method for transdermal administration of drugs as they penetrate the skin stratum corneum barrier with minimal invasiveness.

Key Words: Transdermal route, Microneedle, Drug delivery system, Polymer

SPB006

Amplifiable Novel Dna-Encoded Chemical Libraries in DrugDiscovery Ramavath Venkatesh Naik*, Chembeti Vijaya Lakshmi and Chandu Babu Rao Priyadarshini Institute of Pharmaceutical Education and Research, Guntur, AP

ABSTRACT

DNA-Encoded Chemical Libraries (DELs) have gained momentum over the recent years for the discovery of small molecule ligands and the technology has been integrated in most of the larger pharmaceutical companies. The discovery of organic ligands that bind specifically to proteins is a vital problem in chemistry, biology, and the biomedical sciences. The encoding of individual organic molecules with distinctive DNA tags, serving as amplifiable identification bar codes, allows the construction and transmission of combinatorial libraries of unprecedented size, thus facilitating the discovery of ligands to many different protein targets. Fundamentally, one links powers of genetics and chemical synthesis. After the initial description of DNA encoded chemical libraries in 1992, several experimental embodiments of the technology have been reduced to preparation. This allowed to choose several optimal DELs covering the chemical space of ChEMBL to the highest extent and thus containing the maximum possible percentage of biologically relevant chemotypes. Different combinations of DELs were also analyzed to identify a set of mutually complementary libraries allowing to attain even higher coverage of ChEMBL than it is possible with one single DEL.

Key Words: DEL, DNA, ChEMBL, Chemotypes.

SPB007

Innovative Techniques and Strategies in Drug Discovery

Mondla Sandeep*,Golla Kiran and Chembeti Vijaya Lakshmi

Priyadarshini Institute of Pharmaceutical Education and Research, Guntur, AP

ABSTRACT

Recent advancements in drug discovery have introduced several innovative techniques and strategies. The DOX protocol, leveraging first principles, achieves a 99% accuracy rate in predicting protein-ligand binding structures, significantly improving upon traditional molecular docking methods. Virtual target profiling enables the simultaneous screening of compounds against multiple targets, facilitating hit identification, drug repositioning, and mechanism-of-action studies. In autophagy research, the integration of experimental and computational methods are enhancing our understanding and therapeutic manipulation of this complex process. New findings on Histone deacetylases (HDACs) reveal significant defatty- acylase activity in addition to their known deacetylase functions, paving the way for the development of isoform-selective inhibitors. The FDA‟s approval of kinase allosteric inhibitors and ongoing clinical trials highlight their potential as targeted therapeutic agents. Structure-based design advancements are crucial in developing novel antiviral agents to combat drug resistance. Research into optimizing nitric oxide (NO) levels aims to enhance its anticancer properties. Finally, progress in photoactivation strategies, including photoactivatable caged prodrugs and photoswitchable molecules, improves control over chemical and biological processes with light. These developments collectively advance the field of drug discovery, offering new opportunities for more effective and targeted therapies.

Key Words: Protein-ligand binding structures, Photoactivation, Histone deacetylases (HDACs).

SPB008

Hydrogel-Based Controlled Drug Delivery for CancerTreatment: A Review

Kondaveeri Keerthana*, S. Neeraja, and Chandu Babu Rao

Priyadarshini Institute of Pharmaceutical Education and Research, Guntur, AP

ABSTRACT

Hydrogels have emerged as promising carriers for tumor drug delivery, offering advantages over traditional systemic chemotherapy by reducing severe side effects and providing sustained, localized drug release. Their excellent biocompatibility, biodegradability, and lower toxicity compared to nanoparticle carriers enhance their utility in cancer treatment. Smart hydrogels, which respond to environmental stimuli such as pH, temperature, light, and ultrasound, enable precise control over drug release and in situ gelation, improving the efficiency and convenience of therapy. This review discusses various sizes of hydrogels (microscale and nanoscale) and their corresponding delivery routes, including local injection and systemic administration. It also covers design strategies for stimuli-responsive hydrogels, such as pH, temperature, light, and ultrasound responsiveness. Recent advancements in the field, including dual or multi-stimuli responsive systems, biodegradable smart hydrogels, integration with imaging techniques, and targeted delivery mechanisms, are highlighted. These innovations collectively represent a significant advancement in targeted cancer therapy, with the potential to enhance treatment efficacy and minimize side effects.

Key Words: Hydrogels, microscale and nanoscale

SPB009

Nanosphere Based Oral Insulin Delivery

Shaik Jameela *,Ernapu Meghana and T.Subha Geetha

Priyadarshini Institute of Pharmaceutical Education and Research, Guntur, AP

ABSTRACT

Zinc insulin is successfully encapsulated in various polyester and polyanhydride nanosphere formulations using Phase Inversion Nanoencapsulation (PIN). The encapsulated insulin maintains its biological activity and is released from the nanospheres over a span of approximately 6 h. A specific formulation, 1.6% zinc insulin in poly(lactide-co-glycolide) (PLGA) with fumaric anhydride oligimer and iron oxide additives has been shown to be active orally. This formulation is shown to have 11.4% of the efficacy of intraperitoneally delivered zinc insulin and is able to control plasma glucose levels when faced with a simultaneously administered glucose challenge. A number of properties of this formulation, including size, release kinetics, bioadhesiveness and ability to traverse the gastrointestinal epithelium, are likely to contribute to its oral efficacy.

Key Words: Zinc insulin, Phase Inversion Nano encapsulation (PIN), Oligomer.

SPB010

Labelling in Pharmaceutical Packaging

S.Abhishek, B.Ram Prasad , K.Vinod kumar, KL.Deepthi

Sri Sai College of Pharmacy, Gajapathinagaram, Vizianagaram

ABSTRACT

Labelling is an essential component of pharmaceutical products.It provides crucial information about the medication to healthCare profession and patients.Accurate and comprehensive labelling ensure safe and effective use of pharamaceutical products Label means a display of written, printed or graphic matter upto immediate container or the wrapper of a drug package. The food and drug administration (FDA) requires that Drug labelling be balanced and not misleading . the Label must be scientifically accurate and provide clear Instruction to health care practitioners for prescription Drugs and to consumers for over-the- counter drugs and Supplements.labeling regulations require that the Statemenys of ingredients must include all ingredients,In the order in which they are used in the drug.

Key Words: The food and drug administration (FDA), healthCare

SPB011

Transferosomes- A Novel Drug Delivery System

Prasanth kumar, Ananth kumar, K.L.Deepthi, K.Vinodh Kumar

Sri Sai college of pharmacy, Gajapathinagaram, Vizianagaram

ABSTRACT

It is challenging to administer medications topically or transdermally, due to the fact that the skin serves as a barrier of protection. Most of the time, transdermal administering drugs is restricted by the skin's barrier function. The transdermal approach is regarded as the safest and most efficient because to its many benefits, which include identifiable and prolonged period for action, avoiding the first-pass metabolism, fewer side effects, etc. It also has several drawbacks, such as the inability to transport bigger molecules (>500D) and the inability to cross the stratum corneum barrier. Transfersomes was developed as an alternative to all of these issues because they had the advantages over other transdermal drug delivery systems and also had the ability to easily penetrate the barrier. They are novel vesicular drug delivery system for better transdermal absorption consisting of phospholipid, surfactant, and water. They include a high percentage of drug entrapment because to the natural phospholipids that build them up, and they are biocompatible and biodegradable. Using transfersomes, drugs that have low as well as high molecular weights can be transdermally administered. Transfersomes can deform and squeeze through extremely tiny openings since they are elastic by nature.

Key Words: Transfersomes, Transdermal drug delivery, Characterization, vesicular system, elastic vesicles, the transport mechanism.

SPB012

Preparation and Evaluation of Effervescent Tablets of Grape Seed Extract, A Nutraceutical

K.L.Deepthi, N.Tirupathi rao , K.Harika

Sri Sai College of Pharmacy, Gajapathinagram, Viziyanagaram, AP

ABSTRACT

Grape is one of the most well-known fruits. People usually consume only the fruit and the skin; however, the seed is the part of the fruit that contains important antioxidant rich polyphenol. However, grape seed and its extract have an unpleasant taste. Therefore, this study aimed to formulate effervescent tablets containing grape seed extract (GSE) to overcome the unpleasant taste. Effervescent tablets of GSE were formulated using three formulas, each with a different percentage of the effervescent mix. The tablets were prepared using wet granulation method. The effervescent tablets were evaluated for various characteristics in term of granules flow ability, moisture content, as well as tablets appearance, size and weight uniformity, hardness, friability, effervescence time, pH, and total phenol content. The disintegration time of the three formulations was within the acceptable range, between 3 minutes and 5 minutes. Therefore, we can conclude that the effervescent tablets containing grape seed extract can be prepared as a nutraceutical dosage form.

Key Words: Grape seed extract (GSE), nutraceutical, flowability

SPB013

Nanosponge for Enhancing Bioavailability , Solubility of Oral Drugs:A Review

S Krupa Lahari

V.V. Institute of Pharmaceutical Sciences, Gudlavalleru, Krishna

ABSTRACT

New developments in nanoparticle-based oral medicine have resulted in a profusion of studies to improve the solubility, permeability, and chemical stability of various medications. Nanosponges (NSs) are one type of carriers utilized in this many carrier systems. NSs are nanosized carriers with a sponge-like shape. They have hydrophilic cavities and hydrophobic branches, which aid in the loading of both hydrophilic and hydrophobic medicines. Nano-sponges have a 3-dimensional network and a nanometric cavity size. NSs are very porous, with the capacity to entrap active moieties and the advantage of controlled release. These tiny sponges circulate in the body to reach a specific place and release the medicine in a controlled and predictable manner, assisting in the resolution of numerous issues such as drug toxicity and low bioavailability. One of their significant impacts is the ability to enhance oral absorption and bioavailability. The primary goal of this review is to provide brief updates on NSs for increasing medicine oral absorption as well as their evolutions in loading drugs for enhancing their oral deliverability and treatment of a variety of diseases.

Key Words: Nanosponges (NSs), nanometric cavity, bioavailability

SPB014

Production, Characterization and Optimization of Surfactants (Biosurfactant) from Bacillus Subtlis

Talakappala Reeta, Inturi Dharmendra, Ch. Supriya, Pulipaka Sukhitha

Nirmala college of pharmacy, atmakur, AP.

ABSTRACT

Surfactin is a powerful biosurfactant made by Bacillus subtilis 168. It has impressive surface-active properties and various biological activities, making it valuable for industrial and pharmaceutical uses. In the present study we worked on the production and optimization of surfactin from Bacillus subtilis 168. Identification test of surfactin was performed using Simple staining, Thin Layer Chromatography [TLC], Drop Collapse Test and Emulsification Activity, Hemolytic activity. Surface tension measurements and emulsification assays were employed to assess the biosurfactant's functional properties. The surfactin is optimized at 37°C, PH-7, incubation period 48hrs & it yields Bacillus subtilis 168 (Biosurfactant) 0f 90 mg/L.

Key Words: biosurfactants, optimization, thin layer chromatography, emulsification activity, hemolytic activity, surface tension

SPB015

Isolation, Production, Characterization and Optimization of Enzyme Collagenase from Marine Microorganisms

T.Ishwarya, S.Shanmathi, Reddy Karthi, Naga Chandrika, Supriya Chatla

ABSTRACT

Collagenase enzyme is a protein molecules made up of amino acids. It provides structural support to the extracellular space of connective tissues. Due to its rigidity and resistance to stretching, it is the perfect matrix for skin, tendons and also helps in the wound healing process. In the present study we worked on the isolation, production and optimization of collagenase enzyme from marine bacteria from different selected strains- Halomonas of sea water on Agar nutrient medium. Collagenase enzyme was collected from isolated Halomonas anticariensis and tested for enzyme activity through UV visible spectrophotometric analysis. The enzyme activity is optimized at 360C, PH-7, incubation period 48hrs and Moisture content 47% and study mainly concerned on the production of collagenase from solid substrate which have more high enzymatic activity.

Key Words: Enzymes, Extracellular collagenase, Cup assay, Biochemical assay

SPB016

Development and Evaluation of Floating Microspheres of an Anti-Fungal Drug

Shaik Arifa Begum*, Alva Prathyusha

Department of Pharmaceutics , KVSR Siddhartha College of Pharmaceutical Sciences

ABSTRACT

The purpose of the study was to develop the multiple unit non-effervescent gastroretentive floating hollow microspheres to enhance the bioavailability of the drug by varying the concentration of low-density polymer and release modifier to retaining the formulation at its absorption site. Design of experiment approach applied to get the best possible formulation with minimum assets and experimentation. The hollow microspheres were prepared by emulsion solvent diffusion-evaporation technique using ethyl cellulose as low-density polymer and Eudragit E100 as release modifier. The central composite design was used for the optimization of independent variables and was evaluated for particle size, entrapment efficiency, in vitro floating ability and drug release characteristics. The physicochemical analysis was done to confirm any interaction between drug and excipients. The Scanning Electron Microscopy (SEM) showed a smooth, spherical surface with an inner hollow cavity. The stability study proves that the hollow microspheres were more stable under different storage conditions with no significant changes in formulation. The drug release mechanism of the optimized batch can be explained by Korsmeyer Peppas model. Conclusion: Based on the results, the hollow microspheres with a release modifying polymer offers a superior approach to retain the formulation in the stomach.

Key Words: Floating hollow microspheres, Itraconazole, Stomach specific delivery.

SPB017

Molecular Docking Based Screening of Natural Heterocyclic Compounds as a Potential Drug for Covid-19

Kona. Sowmya

V.V Institute of Pharmaceutical Sciences, Gudlavalleru

ABSTRACT

The coronavirus pandemic poses significant challenges for the pharmaceutical industry. Methods Coronavirus enters host cells via the angiotensin-converting enzyme 2 receptors (ACE2). The SARS-CoV-2 spike glycoprotein is a potential target for medicinal chemists in the development of specific drugs. The current study investigates molecular modeling studies toidentify potential drug candidates. Molecular docking simulations were run on 11 natural heterocyclic compounds/flavonoids. Results When tested against the viral spike protein receptor, isoquercetin had a docking binding energy of -6.74kcal/mol (PDBID: 6LU7). A docking study revealed the interaction of the receptor- binding domain with variousflavonoidcompounds.

Key Words: SARS-CoV-2, angiotensin-converting enzyme 2 receptors (ACE2), , isoquercetin

SPB018

Preparation and Evaluation of Aceclofenac Mucoadhesive Microspheres

M. Syamala Devi, K. Ankitha, G Subba Rao, K Lakshmi, Sk. Ameer Pasha

Sri Siddhartha Pharmacy College, Nuzvid, Eluru , AP

ABSTRACT

Aceclofenac is an effective analgesic and anti-inflammatory agent with a good tolerability profile through its analgesic and anti-inflammatory properties relief in a variety of painful conditions. The objective of the present study was to prepare the mucoadhesive microspheres of aceclofenac. These were developed to reduce the side effects like gastric irritation and to increase the drug bioavailability, to reduce the frequency of dosing and to enhance patient compliance. The microspheres were prepared by orifice-ionotropic gelation method using polymers such as HPMC (K 15 M, K 100 M, 100 cps), Carbopol 940, Sodium CMC, Guar gum, Sodium Alginate, Ethyl Cellulose, Methyl Cellulose and 10% Calcium Chloride solution. Totally 16 different formulations of aceclofenac were prepared by using the above polymers in 1:1 and 9:1 ratios. Finally, the microspheres were evaluated for various characteristics like drug content, encapsulation efficiency, percent mucoadhesive strength and the in vitro release was evaluated for 10 hrs. The Microspheres were institute to be detached, spherical, free-flowing, and of the monolithic matrix type. The microspheres were uniform in size, with a mean size of 73.21 to 98.35 µm. The microencapsulation efficiency was in the range of 68% to 86%. Microspheres with a coat consisting of sodium alginate and a mucoadhesive polymer exhibited good mucoadhesive properties in the Ex Vivo wash-off test. Aceclofenac release from the microspheres was slow and depended on the composition of the coat. Release followed zero-order kinetics (R2 =0.971). The order of decreasing release rate observed with various microspheres was F9 > F7 > F1 > F2 > F3 > F10 > F11 > F4 > F12 > F14 > F13 > F5 > F8> F6 > F16 > F15. The differences in the drug release characteristics of various microspheres are due to the differences in the porosity of the coat formed and its solubility in the dissolution fluid.

Key Words: Aceclofenac, Mucoadhesive microspheres, Carbopol 940, Sodium CMC,..

SPB019

The Past, Present and Future of Microfluidics in Biomedical Research

P. Swetha , A. Suneetha, V. Karuna Sree, T. Prasanthi Lakshmi, P. John Calvin

Department of Pharmaceutics, KVSR Siddhartha College of Pharmaceutical Sciences

ABSTRACT

Microfluidics, a technology characterized by the engineered manipulation of fluids at the submillimetre scale, has shown considerable promise for improving diagnostics and biology research. Certain properties of microfluidics technology , such as rapid sample processing and the precise control of fluids in an assay, have made them attractive candidates to replace traditional experimental approaches . Here we analyse the progress made by lab-on-a- chip microtechnologies in recent years, and discuss the clinical and research areas in which they have made the greatest impact. We also suggest the directions that biologists, engineers and clinicians can take to help this technology live up to its potential.

Key Words: Microfluidics, Biomedical Research, microtechnologies

SPB020

Food Additives- Long Term Effects on Health

Md. Salar Ahamad*, V. Bhanu Vaishnav Sai and K. Ravi Shankar

Department of Pharmaceutics , KVSR Siddhartha College of Pharmaceutical Sciences

ABSTRACT

Food additives have become an integral part of the modern food industry, employed to enhance flavor, appearance, and shelf life. However, the long-term effects of these substances on human health have raised concerns among scientists and consumers alike. This review explores the potential health risks associated with the prolonged consumption of common food additives, including artificial sweeteners, preservatives, colorants, and flavor enhancers. Through an analysis of recent studies, it is evident that certain additives may contribute to health issues such as metabolic disorders, allergic reactions, and even carcinogenesis. Additionally, the interaction between multiple additives and their cumulative impact on health is discussed. The paper emphasizes the need for more comprehensive, long-term studies to better understand the potential risks and to inform regulatory policies aimed at safeguarding public health.

Key Words: Food additives, colouring agents.

SPB021

Formulation and Evaluation of Propranolol Hydrochloride Floating Tablets by 32 Factorial Design

Golla Indusree*, K. Ravi Shankar, G. Ramana Reddy and R. Anusha

Department of Pharmaceutics , KVSR Siddhartha College of Pharmaceutical Sciences

ABSTRACT

The objective of the present study is to formulate Propranolol HCl floating tablets. Floating tablets of Propranolol HCl were designed based on gas generating principle. Matrix tablets each containing 40 mg of Propranolol HCl were formulated employing HPMC K4 M ,HPMC K15 M, Xanthan gum, polyox WSR 303as matrix forming polymer and sodium bicarbonate as gas generating agent. Amoung the four polymers namely HPMCK4M, HPMCK15M, Xanthane gum and Polyox WSR, HPMC K4M gave good release and was selected for formulation of propranolol HCl floating tablets by 32 factorial design. Propranolol HCl release from the floating tablets prepared was slow and spread over 12 h and depended on the composition of the tablets. A selected three level, two factor experimental design (32 factorial design) describe the proportion in which the independent variables HPMC K4M and Sodium bicarbonate were used in formulation of Propranolol HCl floating tablets. Floating lag time(FLT), percent drug released in 8h (DR8h) were selected as dependent variables. The equations for Floating lag time (FLT) and drug release in 8 hr in (DR8) drug dissolved are as follows. Y1= 23.89 +4.17X1 -8.33 X2-0.75X1X2 +0.17X 2 +2.67X22 (FLT), Y2= 81.06 -1.86X1 -4.10X2 -0.14 X1X2 – 0.21X 2 + 6.57 X 2 (DR). Drug release from all the floating tablets prepared followed first order kinetics except in case of F7, F8 and F9. Drug release from all the floating tablets prepared was diffusion controlled with non-Fickian diffusion as the release mechanism from these floating tablets. The closeness of Predicted and Observed values for FLT and DR8h indicates validity of derived equations for dependent variables. Among the nine formulations F9 formulation is considered as best formulation basing on floating lags time and drug release parameters.

Key Words: Propranolol HCl, Foating tablets, 32 Factorial Design

SPB022

Formulation and Evaluation of Dapagliflozin and Saxagliptin Bilayered Tablets

Rajani Vetapalem*, Rajendra Prasad Yejella and Lakshmana Rao Atmakuri

V. V. Institute of Pharmaceutical Sciences, Gudlavalleru, AP, India.

A. U. College of Pharmaceutical Sciences, Visakhapatnam, AP, India.

ABSTRACT

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In this study, two novel anti-hyperglycaemic drugs such as Dapagliflozin and Saxagliptin were evaluated by selecting two novel drug targets including SGCT-2 and DPP-4 respectively. The purpose of this study was to formulate and prepare a bilayer tablet formulation containing an immediate release layer of Dapagliflozin and a sustained release layer of Saxagliptin using direct compression method. This formulation can be used to treat and maintain type 2 diabetes mellitus more effectively. Various super disintegrants such as sodium starch glycolate, lycoat RS 720 and ludiflash were used at optimised concentrations to improve the dissolution rate of Dapagliflozin from the IR layer and various SR polymers such as carbopol 940, gum karaya and HPMC K15M were used at optimised concentrations to achieve extended release of saxagliptin from the SR layer up to 12 hours. The optimised formulations were discovered for Dapagliflozin and Saxagliptin from out of nine formulations such as IR8 (4% w/w of Ludiflash) and SR9 (60% of HPMC K15M). It was observed that 100% of Dapagliflozin was significantly released within 15 minutes and prolonged release was observed for up to 12 hours with zero order kinetics for Saxagliptin from the bilayered formulation. The optimised formulation passed accelerated stability studies as per ICH guidelines, and it can be stated that for more effective management of type 2 diabetes mellitus and were used in the bilayered tablet formulation.

Key Words: Dapagliflozin, Saxagliptin

SPB023

Formulation and In Vitro Evaluation of Bilayered Tablets of Metformin and Glimepiride

Lakshmana Rao Atmakuri*[1], Rajani Vetapalem[1], Haritha Potluri[2], Bhaskar Vallamkonda[3], Ramesh Alluri[4] and Srinivas Nandyala[5]

V. V. Institute of Pharmaceutical Sciences, Gudlavalleru, Andhra Pradesh, India.

Seshadri Rao Gudlavalleru Engineering College, Gudlavalleru, Andhra Pradesh, India.

Vignan's Foundation for Science, Technology & Research, Vadlamudi, Andhra Pradesh, India.

Vishnu Institute of Pharmaceutical Education & Research, Narsapur, Telangana, India.

Sandip Institute of Pharmaceutical Sciences, Nashik, Maharashtra, India.

ABSTRACT

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The present research work was envisaged to develop bilayered tablets to improve therapeutic efficacy for the treatment of diabetes mellitus. The combination of two drugs i.e., Metformin Hydrochloride and Glimepiride were used for the preparation of bilayered tablets which act against type 2 diabetes. The formulation comprise of Glimepiride as immediate release layer formulated using super disintegrant and Metformin Hydrochloride as sustained release layer containing HPMC K100M. Evaluation of bilayered tablets for the immediate release Glimepiride layer and sustained release Metformin Hydrochloride layer with optimization of excipients. The immediate release layer of Glimepiride showed complete release within 45 min and Metformin Hydrochloride release was extended up to 12 hours. The present study revealed that Metformin Hydrochloride and Glimepiride bilayered tablets were successfully developed for the use against type 2 diabetes.

SPA001

Stability-Indicating RP-HPLC Method for Quantifying Pirtobrutinib and Impurities with LC-MS Degradation Analysis

Suneetha Achanti, Vijaya Lakshmi Marella, Mohana naga rajeswari Dasaraju *

Department of Pharmaceutical analysis

KVSR Siddhartha college of Pharmaceutical Sciences

ABSTRACT

A new and efficient reversed-phase high-performance liquid chromatography (RP-HPLC) method has been developed for accurately quantifying Pirtobrutinib and its impurities in pharmaceutical formulations. The separation was achieved using a Waters Alliance-e2695 system and a Waters X-Terra RP-18 ODS column (250 x 4.6 mm, 5 µm particle size). The mobile phase consisted of 0.1% perchloric acid and acetonitrile, mixed in a 70:30 (v/v) ratio, with a flow rate of 1 ml/min. Detection was performed at 260 nm using a photodiode array detector at room temperature. Retention times for Pirtobrutinib and its impurities (Imp-1, Imp-2, Imp-3) were approximately 5.484, 2.086, 2.961, and 4.076 minutes, respectively. Linearity was established for Pirtobrutinib at 25-150 µg/ml and for impurities at 1.25-7.50 µg/ml, with correlation coefficients above 0.999. The limits of detection (LOD) were 0.60 µg/ml for Pirtobrutinib and 0.03 µg/ml for each impurity, while the limits of quantification (LOQ) were 2.00 µg/ml for Pirtobrutinib and 0.10 µg/ml for the impurities. The percent RSD of system precision for Pirtobrutinib and its impurities were 0.88, 0.65, 0.68, and 0.62, respectively, and method precision percent RSDs were 0.54, 1.46, 0.68, and 0.66. The drug underwent stress testing under acid, base, peroxide, heat, and UV conditions following ICH Q1A (R2) guidelines. Degradation products were analyzed using LCMS/MS in ESI positive mode. No significant degradation occurred under photolytic, hydrolytic, or reductive conditions, with assays yielding 99.0%, 99.1%, and 97.9%, respectively. The most degradation was observed under peroxide conditions, at 15.1%. This method is simple, cost- effective, precise, accurate, and robust for analyzing Pirtobrutinib and its impurities, especially under forced degradation conditions.

Key Words: Pirtobrutinib, perchloric acid, impurities, forced degradation, ICHQ1A (R2).

SPA002

Lean Six Sigma: A Synergistic Approach

Ms. S. Vangmai Swaroopa

Department of Pharmaceutical Analysis, Aditya Pharmacy College,

Surampalem, Kakinada, AP.

ABSTRACT

Six sigma is a technological tool that can be used to improve various business processes by reducing different problems, errors, defects and also helps in minimizing variation. This acts as a set of methodologies to increase the efficiency and quality of the process. Six sigma helps in achieving the level of perfect quality. Lean six sigma can significantly help the increase operational performance by integrating these methodologies. This set of methodology uses the DMAIC (Define, Measure, Analyze, Improve, and Improve, and Control steps in an organized framework for problem-solving. It places a significant emphasis on staff involvement, and helps in the application of various statistical methods to detect fault‟s core causes. This helps in the reduction of cost, in the increase of productivity, more customer satisfaction, and higher employee morale are more common outcomes of Lean Six initiatives. This kind of methodology acts as a culture of continuous improvement, adept change management. It acts as a strong commitment from the leadership are necessary the better implementation.

Key Words: Six sigma, DMAIC (Define, Measure, Analyze, Improve, & Improve, & Control)

SPA003

Solubility Enhancement of Ritonavir Drug Using Synthetic Polymers

Ch. Maneesha , G Subba Rao , A.Sowmya

Sri Siddhartha Pharmacy College, Nuzvid, Eluru, AP

ABSTRACT

Ritonavir belong to Class II under BCS and exhibit low variable oral bioavailability due to its poor aqueous solubility. In present study PEG 20000, SOLUPLUS and PLASDONE were used as carriers to enhance the dissolution of Ritonavir. Solid dispersions were prepared at 1:1, 1:2 and 1:3 ratios of drug and polymers. FT-IR was performed to identify the interaction between drug and carriers. Using direct compression method tablets were prepared and evaluated. All the values were found to be within the official I.P. limits. In dissolution study „r" values found to be first order model indicates first order kinetics. In each case tablets prepared employing carriers gave higher dissolution rates as compared to the tablets prepared using pure drug. Hence solid dispersion in polymers can be used for enhancing the solubility and dissolution of Ritonavir..

Key Words: Ritonavir, BCS, PEG, FT-IR, First Order.

SPA004

A New Validated Stability Indicating RP-HPLC Method for Simultaneous Estimation of Elbasvir and Grazoprevir in Tablet Dosage Forms

G. Ramya Sri, M. M. Eswarudu, P. Srinivasa Babu

Department of Pharmaceutical Analysis, Vignan Pharmacy College, Vadlamudi, AP

ABSTRACT

For the simultaneous estimation of Elbasvir and Grazoprevir in tablet dosage form, a reversed phase high performance liquid chromatographic approach has been designed and validated in the current work. The simultaneous separation of Grazoprevir and Elbasvir was achieved on a Hypersil BDS C18 column (150 x 4.6 mm; 5 µm) by eluting with a mobile phase consisting of a mixture of 0.1% OPA buffer (pH 2.8) and acetonitrile (55:45 v/v) at a flow rate of 1.0 mL/min. The analytes were monitored at 260 nm. The injection volume was 10 µ L. The total run time set for elution of compound was 6 min. Under the optimized chromatographic conditions, the retention times obtained for Grazoprevir and Elbasvir were 2.400 and 3.018 min respectively. The current analytical technique validation was conducted in accordance with ICH standards (ICH, Q2R1). The concentration ranges for Elbasvir and Grazoprevir in the linearity study were found to be 12.5–75 µg/mL and 25–150 µg/mL, respectively, and their respective coefficients of variance were found to be 0999 for the both drugs. the % Recovery was found to be 99.05-100.75% and 99.90-100.79%, respectively. LOD and LOQ for Elbasvir were 0.07 µg/mL and 0.4 µg/mL and for Grazoprevir 0.024 µg/mL and 0.08 µg/mL, respectively. The developed method was also applied to monitor the forced degradation studies on the drugs for testing for its ability to resolve the drugs from their degradation products. The results obtained from the above studies indicate that certain amount of degradation of the drugs was observed in the case of acid and alkaline stress conditions. Small amount of degradation was seen in oxidation condition. It was concluded that the simultaneous estimation of Grazoprevir and Elbasvir in bulk and its pharmaceutical dosage form was found to be successfully conducted by using method. It could be applied for the regular examination of the investigated pharmaceuticals in quality control laboratories. Keywords: RP-HPLC, PDA Detector, Elbasvir and Grazoprevir and Method Validation

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SPA005

Analytical Method Development and Validation for the Content Estimation of NDIPA and NEIPA in Esomeprazole Magnesium Delayed-Release Capsules USP 40mg by LC-MS/MS

Shaik Gousiya Sulthana, Vijaya Lakshmi Marella, Suneetha Achanti, Sarala Nekkanti

Department of Pharmaceutical analysis.

KVSR Siddhartha college of Pharmaceutical Sciences, AP

ABSTRACT

In order to ensure the safety of human consumption, nitrosamine contaminants in drug substances and drug products must be monitored. The detection and quantification of impurities, especially genotoxic impurities, in starting materials and APIs is a mandatory requirement implemented by regulatory authorities. These impuritiesmay develop if an amine reacts with a nitrosating agent in the presence of suitable conditions at any stage of drug substance synthesis throughout each product's lifetime. For two putative genotoxic nitrosamine impurities: NDIPA and NEIPA we have presented a simple, quick, and sensitive LC-MS/MS approach in this work. Materials and Methods: Chromatographic separation is achieved using Phenomenex Kinetex 5µm, Biphenyl 100 °A LC-Column 250 X 4.6mm column with 0.1% formic acid in water as mobile phase A and 0.1% formic acid in methanol as mobile phase B at a flow rate of 0.5ml/min using binary gradient mode of elution at a total run time of 25 minutes. Two nitrosamine impurities are successfully ionized and quantified in a positive mode of Atmospheric Pressure Chemical Ionization using multiple reactions monitoring (MRM).

Key Words: (NDIPA), N-Nitroso ethyl isopropyl amine (NEIPA),Esomeprazole, LC- MS/MS.

SPA006

Rapid and Reliable LC-MS/MS Method for Quantification of Sparsentan in Rat Plasma Using Ambrisentan as an Internal Standard

Kancharla Pravalika, Suneetha Achanti, Vijaya Lakshmi Marella

Department of Pharmaceutical analysis.

KVSR Siddhartha college of Pharmaceutical Sciences,AP

ABSTRACT

Sparsentan quantification was achieved in rat plasma by developing a rapid, accurate, reproducible, and straightforward liquid chromatography-tandem mass spectrometry (LC- MS/MS) system using ambrisentan as an internal standard. This study examines the latest advancements in bioanalytical LC-MS/MS technologies, employing a 150×4.6 mm, 3.5 µm Agilent Eclipse C18 column in isocratic mode at ambient temperature. The mobile phase consisted of acetonitrile and ammonium formate with 0.1% formic acid in a 40:60 v/v ratio, at a flow rate of 1.0 ml/minute. The injection volume was 10 µl, and the total chromatographic run time was 6 minutes, with sparsentan having a retention time of 2.188 minutes. The method demonstrated a correlation coefficient (r^2) of 0.99974 and was validated for sparsentan over a linear range of 5.00–100.00 ng/ml. Results for precision, accuracy, recovery, matrix effect, and stability were all within acceptable limits.

Key Words: Sparsentan, rat plasma, ambrisentan, LC-MS/MS

SPA007

Exploring emissions from plastics: GC-MS Analysis of Paper cups from Various Brands

S.L.S Mounica pratyusha, Ch.pravalika

Department of Pharmaceutical analysis.

KVSR Siddhartha college of Pharmaceutical Sciences, AP

ABSTRACT

This study investigates the potential leaching of plastic compounds from paper cups into hot beverages using Gas Chromatography-Mass Spectrometry (GC-MS). Paper cups, commonly lined with a thin layer of polyethylene (PE) to prevent leakage, may pose a risk of plastic contamination in beverages, particularly when exposed to high temperatures. In this analysis, we subjected commercially available paper cups to conditions simulating typical usage, including exposure to hot liquids. The extracts were then analyzed by GC-MS to identify and quantify any leached plastic compounds. Our findings revealed the presence of polyethylene- derived compounds in the samples, indicating that under certain conditions, PE can leach into beverages from the paper cup lining. These results raise concerns about the potential health implications of prolonged exposure to such contaminants and highlight the need for further research and stricter regulatory standards for food-contact materials.

Key Words: Paper cups, Gas chromatography-Mass spectroscopy, Polyethylene.

SPA008

Determination of Pesticide Residues in Different Varieties of Tomatoes Using QuEChERS Method by Gas Chromatography – Mass Spectrometry

Koppula Jyothi* , Tarun Kumar Lanke, Hari Krishna Peketi1, Routhu Chandan

***Assistant Professor, K.V.S.R.Siddhartha College of Pharmaceutical sciences**

ABSTRACT

The harmful effects of pesticide residues are a threat to our health. Therefore, the current study aimed for the determination of pesticide residues in tomatoes available in different regions of Vijayawada region,Andhra Pradesh state. A total of 300 samples were collected from a local market and then analyzed for monitoring of pesticide residues. A quick, easy, cheap, effective, rugged, and safe (QuEChERS) multi-residue extraction method followed by (GC–MS) was successfully implemented. This 17-min-run analytical method detects and quantifies pesticide residues with acceptable validation performance parameters in terms of linearity,LOD,LOQ.

Key Words: Food commodities,GC–MS/MS,Maximum residue limits, Method validation

SPC001

Human Health Effects from Chronic Arsenic Poisoning–A Review

Jashuva Rakoti, Naga kumar Boddana, K.L.Deepthi, K.Vinodhkumar

Department of Pharmaceutical Chemistry

Sri Sai College of Pharmacy,

Gajapathinagaram, Vizianagaram

ABSTRACT

The ill effects of human exposure to arsenic (As) have recently been reevaluated by government agencies around the world. This has lead to a lowering of As guidelines in drinking water, with Canada decreasing the maximum allowable level from 50 to 25 µg/L and the U.S. from 50 to 10 µg/L. Canada is currently contemplating a further decrease to 5 µg/L. The reason for these regulatory changes is the realization that As can cause deleterious effects at lower concentrations than was previously thought. There is a strong relationship between chronic ingestion of As and deleterious human health effects. As regulatory levels of As have been decreased, an increasing number of water supplies will now require removal of As before the water can be used for human consumption. While As exposure can occur from food, air and water, all major chronic As poisonings have stemmed from water and this is usually the predominant exposure route. Verbal IQ and long term memory can also be affected, Increases in fetal loss and premature delivery, and decreased birth weights of infants, can occur even at low (<10 µg/L) exposure levels. Malnourished people have been shown to be more predisposed to As-related skin lesions. A large percentage of the population (30–40%) that is using As- contaminated drinking water can have elevated As levels in urine, hair and nails, while showing no noticeable clinical symptoms, such as skin lesions. It is therefore important to carry out clinical tests of As exposure. Communities and individuals relying on groundwater sources for drinking water need to measure As levels to ensure that their supplies are safe. Communities with water As levels greater than 5 µg/L should consider a program to document As levels in the population.

Key Words: Arsenic, Drinking water, Chronic toxicity, Cancer, Hyperpigmentation, Hair

SPC002

Molecular Docking Studies of Pyridine -Cyanonitrile Derivates Against PPAR–Gamma As Potetntional Anti-Diabetic Agents.

Sk.Jareena

Department of Pharmaceutical Chemistry,

KVSR Siddhartha college of Pharmaceutical Sciences, AP

ABSTRACT

Pioglitazone is a Food and Drug Administration-approved thiazolidinedione (TZD) derivative and peroxisome proliferator-activated receptor gamma (PPARγ) agonist and used for the treatment of diabetesmellitus (DM). For preliminary screening, the pyridine carbonitrile(P1−P100) were performed insilico toxicity studies with Topkat software . The binding affinity and interaction patterns of molecules were evaluated against ppar-gamma receptor proteins using molecular docking approach. A total of ninty-seven compounds were docked against these receptors. Out of which, top eleven compounds against each receptor were shortlisted based on their S-scores and binding affinities. The selected ligands strictly followed Lipinski's rule of five and exhibited good ADMET profiling. The standard drug (PDB : 5Y2O)molecule having the better binding affinity -8.38 kcal/mole and Ki value =720.37nM , the Schiff bases molecules having the binding score -9.58 kcal/mol and the 95.54 nM. The topographical analysis of the binding site that would highlight the density of hydrogen bond donors and acceptors present at the binding and having the vast number of amino acid interaction with binding pocket.

Key Words: Pioglitazone , PPARγ , insilico toxicity , Molecular docking , ADMET studies .

SPC003

Ocular Biodistribution and Antiangiogenic Potential of Curcuminoid Loaded Nanogels

Durga Prasad Kondeti, T. Sundarrajan,
Department of Pharmaceutical Chemistry,
KVSR Siddhartha college of Pharmaceutical Sciences, AP

ABSTRACT

Curcuminoid-loaded hydrogels for the treatment of diabetic retinopathy have been developed and reported using gellan gum, and promising results have been obtained from in vitro characterization studies. The antiangiogenic potential of the developed CUR-NGs was greater than that of the pure CUR and blank CUR formulations. The anticancer activity of CUR-NGS was excellent against MDA-MB-231 cells at concentrations ranging from 2.5 µg/ml to 150 µg/ml. Nuclear fragmentation and condensation of the developed CUR-NGs in MDAMB231 cells were observed by fluorescence imaging. The developed CUR-NGs are nontoxic to the eye, as revealed by ocular irritation studies. The results of ocular biodistribution studies indicated that the developed CUR-NGs had some exposure to the posterior segment of the eye, with a maximum of 0.36 ng/g of curcuminoid being observed in the retina upon topical administration. This indicates that the developed CUR-NGs may be effective for the treatment of diabetic retinopathy.

Key Words: Curcuminoid, dispersion, Diabetic retinopathy, Hydrogel formulation.

SPC004

Synthesis, Characterization and In-Silico Molecular Docking Studies of Novel 2- (Substituted Quinoline-3-Yl) Benzenamine Derivatives

N. Jonus Evangel, S. Iefath Naaz, B.Anupama

Department of Pharmaceutical Chemistry,

KVSR Siddhartha college of Pharmaceutical Sciences, AP

ABSTRACT

Background: The present study focuses on the synthesis and characterization of 2-(substituted quinolin-3-yl) benzenamine, which are to the best of our knowledge, have not previously been described in the literature. 2-(substituted quinolin-3-yl)benzenamine, were known to possess broad range of biological / pharmacological activities such as antitumor, antimalarial, antibacterial, antifungal, antiparasitic and insecticidal, antiviral, & anti-inflammatory, antiplatelet. The present work was aimed at conventional synthesis of some novel 2- (substituted quinolin-3-yl) benzenamine derivatives and their biological evaluation. The synthesized 2-(substituted quinolin-3-yl) benzenamine were further confirmed by TLC, melting point and spectral data analysis like IR, 1HNMR, etc. The molecules were prepared by Two steps process.Result: The newly synthesized compounds were tested against various in-silico properties all the compounds gave a good in-silico results and obeyed the rule of 5 ,active against various inhibitors and crosses the required barriers. Also, the compounds showed good binding affinity against malarial agents and bacterial agents.

Key Words: Benzamine, in-silico, pharmacological activity, pharmacophore.

SPL001

Diet's Deadly Duo: Obesity and Diabetes

Ch. Nagabhushanam, M. Cherishma, A. Manasa Nithi

Department Of Pharmacology,

KVSR Siddhartha College of Pharmaceutical Sciences, AP

ABSTRACT

The global surge in obesity and diabetes underscores the critical need to understand the interplay between diet, obesity, and diabetes for effective prevention and management. This overview aims to explore how dietary habits contribute to obesity, how obesity escalates diabetes risk, and the dietary strategies for addressing these issues. Dietary patterns significantly impact obesity, with high-calorie diets rich in sugars and fats, processed foods, and large portion sizes leading to excessive calorie intake and weight gain. Nutritional factors such as imbalances in macronutrients and deficiencies in micronutrients also play a role, influencing energy balance and metabolism. Obesity contributes to diabetes primarily through mechanisms like insulin resistance and chronic inflammation. Over 90% of Type 2 Diabetes cases are linked to overweight or obesity, with diabetes prevalence increasing alongside obesity levels. Genetic factors and sedentary lifestyles further compound this risk. Effective dietary interventions include adopting a balanced diet with fruits, vegetables, whole grains, lean proteins, and healthy fats, controlling portion sizes, and favoring low glycemic index foods. Combining these with regular exercise and sustainable lifestyle changes is crucial for weight management. Regular monitoring and professional guidance are also recommended for optimal results. These findings underscore the importance of dietary modifications in managing weight and mitigating diabetes risk. Due to technological advancements and fast moving culture we have lost the art of eating healthy foods and got adapted to sedentary lifestyle. The problem is too significant to ignore. Hence more global measures for preventions are essential to manage obesity and diabetes.

Key Words: Obesity, Diabetes

SPL002

Extracellular Matrix-Inspired Biomaterials: Bridging Cell Biology and Tissue Regeneration for Advanced Therapeutics

Kanaka Durga Devi Nelluri , Sahithi Kamepalli , Surapaneni Uma Shankukha Sai Tejaswini, Leenaja Kolli, Alaparthi Bhavana .

Department Of Pharmacology,

KVSR Siddhartha college of Pharmaceutical Sciences, AP

ABSTRACT

The study of extracellular matrix (ECM) biology is at the forefront of tissue regeneration and offers a wealth of ideas for the creation of biomaterials. This thorough analysis intends to clarify the complex connection between the development of biomaterials specifically designed for tissue regeneration and ECM biology, with an emphasis on the cell and molecular biology studies that form the foundation of this rapidly evolving subject. This review's main objective is to summarize recent developments and state of the art information on ECM-inspired biomaterials and assess how well they promote tissue regeneration. We explore the basic ideas of extracellular matrix (ECM) biology, revealing the crucial molecular and cellular processes that regulate tissue growth. Next, we investigate how biomaterials that are designed to emulate the complexity of the extracellular matrix (ECM) augment regeneration mechanisms. The review thoroughly examines a wide range of publications on cell and molecular biology, analyzing methods and interpreting results to provide novel insights into the interactions between biological systems and biomaterials. Through a comparative analysis of various ECM-inspired biomaterials, our goal is to extract common themes, spot patterns, and identify possible directions for further investigation. Our goal is to provide a better knowledge of the complementary link between biomaterials and biological systems by examining reports on cell and molecular biology. This will ultimately help to enhance the field of regenerative medicine.

Key Words: Extracellular matrix (ECM), Biomaterials, Tissue regeneration

SPL003

Identification and Evaluation of Glcn-6-P Synthase Inhibitor As Potent Anti-Diabetic Agent

Iswarya Obilineni

Department Of Pharmacology,

KVSR Siddhartha college of Pharmaceutical Sciences, AP

ABSTRACT

Glucosamine-6-phosphate synthase (GlcN-6-P synthase), also known as L-Glutamine:D Fructose- 6-Phosphate amidotransferase (GFAT) present in almost all known living organisms is a promising target for inhibition of microbial growth and treatment of diabetes. Our aim is to identify and evaluate the natural GlcN-6-P Synthase inhibitor as potent anti-diabetic agent. In order to prove the efficacy of GFAT inhibitor, we performed in silico molecular docking, MMGBSA and Molecular dynamics studies using Schrodinger Suite version 2023, in vitro Studies on HIRc and L6 cell lines, conducted acute oral toxicity studies as per OECD 423 guidelines and evaluated in vivo anti- diabetic potential of GlcN-6-P Synthase inhibitor using high fat diet-Streptozotocin induced rat model. The study aligns with the growing interest in complementary and alternative approaches to diabetes management as well as natural compounds could serve as complementary agents to conventional treatments or even as alternatives for individuals seeking non-pharmacological options.

Key Words: Glucosamine-6-phosphate synthase (GlcN-6-P synthase), GFAT inhibitor

SPL004

New Developments in Drug Discovery: Creative Methods and Targeted Treatments

Jada Bhavani*, N.Ambika, Chandu Babu Rao

Department of Pharmacology,

Priyadarshini Institute of Pharmaceutical Education and Research, Guntur, AP

ABSTRACT

Finding new therapeutic molecules to treat a variety of ailments is the goal of the dynamic and ever evolving field of drug discovery. In this review, we provide a summary of the most recent developments in drug discovery, emphasizing novel strategies and focused treatments that have surfaced recently. High-throughput screening, rational drug design, artificial intelligence and machine learning-based approaches, and other cutting-edge methods and strategies utilized in drug design and development are all covered in this review. Furthermore, we address the noteworthy advancements in targeted therapeutics, emphasizing precision medicine and tailored therapies that provide enhanced effectiveness and minimized negative effects. Moreover, we examine the most recent developments in nanotechnology and medication delivery systems, which have opened the door for improved.

Key Words: Drug Discovery, Targeted Therapeutics, Artificial Intelligence, Machine Learning, Drug Delivery Systems, Nanotechnology

SPL005

A Closer Look at Guillain-Barre Syndrome and its Variants

N. Ambika * Jada Bhavani, Budagala Gayathri

Priyadarshini Institute of Pharmaceutical Education and Research,

5th Mile, Pulladigunta, Guntur-522017, Andhra Pradesh, India.

ABSTRACT

Guillain-Barré Syndrome (GBS) is an umbrella term that describes several clinically and electrophysiologically heterogenous disorders that share the common feature of acute onset regional or generalised flaccid paralysis with or without sensory loss. Clinically, GBS may have generalised weakness or there may be restricted involvement and rare central nervous system involvement in the form of Bickerstaff Brainstem Encephalitis. Electrophysiologically, there may be demyelinating or axonal features, which can determine the prognosis in an individual patient. A knowledge of variants of GBS is important in differentiating GBS from other mimics. Nerve conduction studies and anti-ganglioside antibodies may be helpful in further classifying various GBS variants. Although current treatment guidelines are similar for various subtypes, novel treatment strategies are in development depending on the pathophysiology of GBS variants. In this article we review the current understanding of pathophysiology and clinical features of GBS and its variants.

Key Words: Guillain-Barré syndrome (GBS), AIDP, Miller Fisher

SPL006

A Review on Hidden Pandemic of Antibiotic Resistance Super Bugs

Mattapalli Navya*, Konduri Siromani, Uggirala Mounika

Priyadarshini Institute of Pharmaceutical Education and Research,

5th Mile, Pulladigunta, Guntur-522017, Andhra Pradesh, India.

ABSTRACT

Antibiotics have helped to save the lives of many people. Antibiotics are divided into classes based on their origin, form, and method of action. Numerous clinically relevant bacterial strains have been found to have both innate and acquired antibiotic resistance mechanisms. This has posed a substantial threat to antibiotic use, contributing to the spread of microorganisms resistant to effective first-choice or first-line treatments. Antibiotic resistance has resulted in the emergence of so-called superbugs, which are immune to current treatment methods. There are fewer antibiotics available to treat these infections, and fewer are being developed. Infectious illnesses are a prominent cause of death among children in poor and underdeveloped countries. Antibiotics are chemical compounds that prevent bacterial multiplication.

Key Words: Antibiotics, antimicrobial resistance, Superbugs.

SPL007

Intellectual Properties

D.Sai Krishna ,G. Pavan Kalyan. G. Sobha Rani, Dr. K. L. Deepthi

Sai College of Pharmacy, Vizianagaram

ABSTRACT

Intellectual property (IP) is a category of property that includes intangible creations of the human intellect. There are many types of intellectual property, and some countries recognize more than others. The best-known types are patents, copyrights, trademarks, and trade secrets. The modern concept of intellectual property developedin Englandinthe 17th and 18th centuries. The term intellectual property began to be used in the 19th century, though it was not until the late 20th century that intellectual property became commonplace in most of the world's legal systems. Supporters of intellectual property laws often describe their main purpose as encouraging the creation of a wide variety of intellectual goods. To achieve this, the law gives people and businesses property rights to certain information and intellectual goods they create, usually for a limited period of time. Supporters argue that because IP laws allow people to protect their original ideas and prevent unauthorized copying, creators derive g.reater individual economic benefit from the information and intellectual goods they create, and thus have more economic incentives to create them in the first place. Advocates of IP believe that these economic incentives and legal protections stimulate innovation and contribute to technological progress of certain kinds.

Key Words: Intellectual property, Supporters.

SPL008

Potential Applications of Exosomes in Vaccine Development and Delivery

Md. Farheena sulthana*

V. V. Institute of Pharmaceutical Sciences, Gudlavalleru

ABSTRACT

Exosomes are the components derived from the cells of a biological system which are composed of proteins, lipid, genetic information, cytokines, and several growth factors. They play a key role in immune responses and immune modulation and other inflammatory responses. Immune modulations has downstream effects on the regeneration and repair of damaged cells or tissues, promoting survival of the cells. These are nano-sized bio vesicles and plays an important role in cell to cell communication. On the top of various biological messengers like mRNA, fragments DNA, proteins, antigens the exosomes modulate internal cell environment. These alters and aids in promoting downstream cell signaling pathways which finally helps in tumor therapy. This has developed an idea of developing the vaccines to modulate the immune response and treat various diseases and vaccine delivery vehicles. The exosomes play a role in various biological processes like angiogenesis, tumor growth metastasis, antigen – specific T-B cell responses etc., this is proven by both clinical and preclinical studies.

Key Words: Exosomes, T-Bcell

SPG001

Applications of Natural Indicators in Acid Base Titrations

Kamme Jaya Krishna *, Golla Kiran, Budagala Gayathri

Department Of Pharmacognosy,

Priyadarshini Institute of Pharmaceutical Education and Research, Guntur, AP

ABSTRACT

Currently, the most usual analytical methods are established to identify compounds, though analytical methods like gravimetric and titrimetric analysis were the most concern. In the titrimetric analysis method, the endpoint is detected by the colour changes from one medium to another medium (either acidic medium or basic medium) with the addition of substances are known as indicators. Nowadays, many synthetic indicators are available, which produce environmental pollution and are costly. Several synthetic indicators produce toxicity in humans. Therefore, the search for alternative indicators from natural sources is required for cost-effectiveness and to minimize the toxicity and pollutant from the environment.

Key Words: Indicator, Natural sources, Phyto constituents, Synthetic indicator.

SPG002

Pharmacognosy: Science of Natural Products in Drug Discovery

Talluri Sravanthi*, Shaik Jameela, Chembeti Vijaya Lakshmi

Department of Pharmacognosy,

Priyadarshini Institute of Pharmaceutical Education and Research, Guntur, AP,

ABSTRACT

The study of pharmacognosy focusses on natural medications derived from microorganisms, animals, and most plants. Many significant medications, such as morphine, atropine, galanthamine, and others, have their origins in natural sources and are still useful model molecules in drug development today. Pharmacognosy includes traditional medicine as well, with the majority of third-world nations still relying on the usage of herbal remedies. As a result, pharmacognosy continues to be widely accepted in the pharmaceutical sciences and is essential to the process of discovering new drugs.

Key Words: Pharmacognosy, Natural products, Herbal medicine, Pharmacy

SPG003

A Medicinal Glabrous Shrub Used to Treat Hypertension is *Hibiscus Rosa Sinensis*

P. Sri Veera Mani Deepika, G. Sowjanya

Department Of Pharmacognosy

Aditya Pharmacy College, Surampalem, AP, India

ABSTRACT

Hibiscus is a glabrous shrub that is widely grown as a decorative plant in various geographic areas. The entire plant, along with its synthetic material and masses, is inherited for the treatment of hypertension. There is not much evidence to support its use as an antihypertensive in therapeutic trials. Investigate the hibiscus protagonist and illustrate instances of antihypertensive phenomena. Plant gathering and harvesting. The hibiscus flowers that were not withered were retrieved from various geographic fields. Flowers were allowed to dry at ambient temperature before being ground into fine particles in a mixer. One gram of small particles was added to 100 milliliters of sterilized water, heated for six hours, and then strained through Whatman No. 1 filter paper, spiraling it for a minute. This created a tea and drinking liquid that could be consumed every day during daylight hours. Renin deterrent, ACE, was found to convey antihypertensive consummation. The experiment showed that the patients who received hibiscus extracts had lower B.P. In two treatment groups, there was an antihypertensive outcome (control and experimental).Melted analects were found to be responsible for lowering blood pressure, heart rate, systolic and diastolic blood pressure in the experimental group, and to be a substitute for captoprill (25 mg/day) in the control group. It is undeniably true that the components of hibiscus flower analects exhibit perfect cautionary and antagonistic mechanism responses to hypertension.

Key Words: *Hibiscus*, Renin, Hypertension, ACE, Captopril

SPG004

Are Medicinal Plants the Future of *Loa Loa* Treatment?

T. Sandhya

Department of Pharmacognosy,

V.V Institute of Pharmaceutical Sciences

ABSTRACT

Loa loa filarial worm affects humans living in rural areas, urban slums, or conflict zones. This parasite is responsible for neglected tropical diseases, endemic in rainforest areas of the West and Central African. L. loa has also been diagnosed among travelers and migrants. In areas that are co-endemic of L. loa filarial with other filariasis such as onchocerciasis, lymphatic filariasis, or mansonelliasis, the treatment by diethylcarbamazine or ivermectin increases the risk of severe adverse effects. To remedy to this, it would be interesting to explore other tracks such medicinal plants. Nearly 80% of worldwide seed traditional practitioners are the first choice, and a large number of medicinal plants were claimed to possess antifilarial activities. This review relates about medicinal plants used to treat L. loa filarial disease.

Key Words: Alternative treatment, Loa loa filarial, medicinal plants

SPG005

Interaction of Masilinic Acid of Clove Plant (*Syzygium aromaticum*) with CD81 Antigen in Inhibiting HIV Virus Regulation In Silico

Jayamangala Kanksha

Department of Pharmacognosy ,V V Institute Of Pharmaceutical Sciences, Gudlavalleru

ABSTRACT

This research explores the interaction of Masilinic Acid from the clove plant (Syzygium aromaticum) with the CD81 antigen to inhibit HIV virus regulation in silico. Using computational methods such as Pymol, Pyrex, and Protein Plus, we demonstrate that Masilinic Acid can significantly interact with the CD81 antigen. The obtained data shows binding affinities of -6.4, - 6.2, and -5.7, and RMSD values of 0, 1.885, and 1.952. Further detailed interaction analysis with Protein Plus strengthens these findings, providing evidence of a strong interaction between Masilinic Acid and the CD81 antigen. This study also includes the testing of the Lepinski Rule of Five to assess the potential of Masilinic Acid as a drug candidate, with results indicating a mass of 472, three hydrogen bond donors, four hydrogen bond acceptors, a log P value of 6.2, and a molar reactivity of 134.These results indicate that Masilinic Acid has the potential as an inhibitor of the CDB1-HIV interaction, Which can be utilized as an effective antiviral strategy.

Key Words: Masilinic Acid, Protein

SPG006

Preparation and Evaluation of Herbal Hair Dye Formulations

V. KarunaSree, Yamini Durga Talaparthi, Swetha Polagani,

R.Prasanna, G. Sai lavanya, S.Jaswanth,

Department of Pharmacognosy, KVSR Siddhartha College of Pharmaceutical Sciences

ABSTRACT

Herbal dyes, derived from natural sources such as plants, roots, leaves, and flowers, offer a plethora of benefits including biodegradability, non-toxicity, and minimal environmental impact. The cosmetic industry is witnessing a growing demand for natural and sustainable alternatives, particularly in the realm of hair care. Herbal hair dyes, derived from plant-based sources, have emerged as a viable option for individuals seeking to color their hair without exposing it to harsh chemicals. Herbal hair dyes offer a range of benefits, including the absence of synthetic chemicals such as ammonia, parabens, and resorcinol, which are commonly found in conventional hair dyes. Instead, these dyes harness the coloring properties of plant based ingredients. Various plant species such as Beta vulgaris, Tagetes erecta, Tecoma stans, Butea monosperma, Lawsonia inermis are explored for their dyeing potential and color variations. All the samples retained colour even after 15 washes. This research provides insights of the scientific principles in hair dyeing, including extraction methods, formulation techniques, and color variations achievable with different plant-based ingredients. Additionally, considerations such as application methods, color longevity, and compatibility with hair types are studied to provide a comprehensive overview of herbal dyes.

Key Words: Herbal dyes, conventional dyes, mordants, modifiers, extraction, formulation etc.

SPG007

Qualitative Analysis of Phytoconstituents in *Ipomea sagittifolia (Burn. f.)* Leaf Extract Using HPTLC Fingerprint Analysis

Raveesha Peeriga*, Lakshmana Rao Atmakuri, Krishnaveni Manubolu, SA Mohamed Shiek Arabath

V. V. Institute of Pharmaceutical Sciences, Gudlavalleru, Andhra Pradesh, India.

Narayana Pharmacy College, Nellore, Andhra Pradesh, India.

Arulmigu Kalasalingam College of Pharmacy, Krishnankoil, Tamil Nadu, India.

ABSTRACT

Analyzing and interpretation an extract consisting of varied phytoconstituents in a qualitative perspective is made possible in ease by using HPTLC fingerprint analysis. Use of Ipomea sagittifolia (Burn. f.)., in Traditional system of Medicine have been used since from ancient times. According to Current Good Manufacturing Practices, the relevance of quality in regard of phytoconstituents is very much needed hence HPTLC is choosen to interpretate the phytoconstituents viz., glycosides, essential oils and tannins in Ipomea sagittifolia (Burn. f.)., as it is a very reliable method of analysis. This work is to establish HPTLC finger print profile for the secondary metabolites viz., glycosides, essential oils and tannins in leaf methanolic extract of Ipomea sagittifolia (Burn. f.)., utilizing CAMAG HPTLC System associated with Linomat 5 Applicator, TLC Visualizer and Scanner 4. Evaluation the presence of phytoconstituents by HPTLC densitometric analysis at wavelength 254nm and 366nm had shown various peaks in Chromatogram. The phytochemicals are assessed by interpretation of resulted peaks, peak heights, peak area and Rf values which were stated in respective tables. The work revealed the presence of phytoconstituents glycosides, essential oils and tannins. This information is further useful to explore chemical profiling and identification of bioactive constituents when their Rf values of these compounds are compared with standards as reference.

SPP001

Recent Advance in Drug Discovery: Innovative Approaches and Targeted Therapeutics

Chitla Sree Lakshmi*, Chembeti Vijaya Lakshmi, Chandu Babu Rao.
Department of Pharmacy practice,
Priyadarshini Institute of Pharmaceutical Education and Research, Guntur, AP

ABSTRACT

Drug discovery is a dynamic field constantly evolving with the aim of identifying novel therapeutic agents to combat various diseases. In this review, we present an overview of recent advances in drug discovery, highlighting innovative approaches and targeted therapeutics that have emerged in the last few years. The review covers a range of cutting- edge techniques and strategies used in drug design and development, including artificial intelligence and machine learning-based approaches, high-throughput screening, and rational drug design. Additionally, we discuss the significant progress made in the field of targeted therapeutics, with a focus on personalized medicine and precision treatments that offer improved efficacy and reduced side effects. Furthermore, we explore the latest breakthroughs in drug delivery systems and nanotechnology, which have paved the way for enhanced drug targeting and bioavailability. This comprehensive review aims to provide insights into the most promising developments in drug discovery, offering potential avenues for the future of medicine.

Key Words: Drug Discovery, Innovative Approaches, Targeted Therapeutics, Artificial Intelligence, Nanotechnology.

SPP002

Innovative Techniques And Strategies In Drug Discovery

Mondla Sandeep*,Golla Kiran, Chembeti Vijaya Lakshmi

Department Of Pharmacy practice,

Priyadarshini Institute of Pharmaceutical Education and Research, Guntur, AP

ABSTRACT

Recent advancements in drug discovery have introduced several innovative techniques and strategies. The DOX protocol, leveraging first principles, achieves a 99% accuracy rate in predicting protein-ligand binding structures, significantly improving upon traditional molecular docking methods. Virtual target profiling enables the simultaneous screening of compounds against multiple targets, facilitating hit identification, drug repositioning, and mechanism-of-action studies. In autophagy research, the integration of experimental and computational methods is enhancing our understanding and therapeutic manipulation of this complex process. New findings on histone deacetylases (HDACs) reveal significant defatty- acylase activity in addition to their known deacetylase functions, paving the way for the development of isoform-selective inhibitors. The FDA‟s approval of kinase allosteric inhibitors and ongoing clinical trials highlight their potential as targeted therapeutic agents. Structure-based design advancements are crucial in developing novel antiviral agents to combat drug resistance. Research into optimizing nitric oxide (NO) levels aims to enhance its anticancer properties. Finally, progress in photoactivation strategies, including photoactivatable caged prodrugs and photoswitchable molecules, improves control over chemical and biological processes with light. These developments collectively advance the field of drug discovery, offering new opportunities for more effective and targeted therapies.

Key Words: Protein-ligand binding structures, Photoactivation, Histone deacetylases (HDACs).

SPP003

Comparative Study on Rifaximin, Lactulose and its Combination in the Management of Hepatic Encephalopathy

Shobila Pranathi*, Akkineni soujanya

Department of Pharmacy practice.

KVSR Siddhartha College of Pharmaceutical Sciences

ABSTRACT

This study helps in determining prescribing patterns, efficacy, safety, cost-effectiveness of drugs in hepatic diseases by comparing mono therapy & combination therapy which further helps to reduce risk of remission of disease as well as re-hospitalization. The main aim is to compare mono therapies and combination therapy with respect to prescribing pattern, efficacy, cost & safety in management of Hepatic Encephalopathy (HE). It is a prospective, observational study conducted at a tertiary care setting (Department of Gastroenterology, PSG hospital, Coimbatore). 200 Study subjects were selected from inpatients of gastroenterology department with liver cirrhosis who were prescribed with rifaximin or lactulose or its combination. Our study was conducted for a period of six months. Study participants were recruited based on the following selection criteria:-INCLUSION CRITERIA- Age>18years, Patients willing to give Consent, Patients with Liver Cirrhosis or Hepatic Encephalopathy, Patients on Oral Rifaximin or Lactulose Therapy. EXCLUSION CRITERIA- Pregnancy, Lactating women, Renal Failure patients and patients with other neuropsychiatric disorders. It was found that combination therapy was statistically significant than lactulose therapy in reducing severity of flapping tremor, in improving performance in number correction test, in improving mental state of patient, in reducing HE index($p<0.001$). Statistically significant difference was seen among the groups in reducing blood ammonia level. Statistical analysis used for the study was paired t test. In conclusion, combination therapy is preferable in managing HE compared to other regimens in severe cirrhotic & encephalopathic patients as it is more efficacious, safe and economic.

Key Words: Hepatic encephalopathy, liver cirrhosis, rifaximin, lactulose, combination therapy, monotherapy, HE index, ammonia

SPP004

Pharmacovigilance: A Worldwide Master Key for Drug Safety Monitoring

Ernapu Meghana*, Gaddada Lavanya, Chandu Babu Rao

Department of Pharmacy practice,

Priyadarshini Institute of Pharmaceutical Education and Research, Guntur, AP

ABSTRACT

Pharmacovigilance is an important and integral part of clinical research. Pharmacovigilance is "defined as the pharmacological science relating to the detection, assessment, understanding and prevention of adverse effects, particularly long term and short term adverse effects of medicines. This addresses what exactly is pharmacovigilance. What do we know of its benefits and risks, challenges and the future hold for pharmacovigilance in Indian medicine. Here the main focus on the aims and role of Pharmacovigilance in medicines regulation and their Partners.

Key Words: Drug safety, pharmacovigilance

SPP005

Pharmacovigilance and it's Softwares

M.S Kishore & G.Rakesh, D. Praveen Kumar , Dr.K.L.Deepthi

Department of Pharmacy practice, Sri Sai College of Pharmacy

ABSTRACT

Pharmacovigilance begins from clinical phase and go on throughout the product life- cycle of the drug. Pharmacovigilance focuses at assessment, detection and prevention of any possible drug related problems and adverse effects, particularly acute adverse effects and chronic adverse effects of drugs, biological products, herbalism and traditional medicines. In recent years, pharmacovigilance has evolved with increasing importance to better clinical practice and public health science. The various methods used in pharmacovigilance are active surveillance, passive surveillance, stimulated reporting, targeted clinical investigation, comparative observational studies, descriptive studies. In order to keep up the demands and maintenance of patient"s health the new developments in pharmacovigilance is essential. For the future guidance there are three publications in pharmacovigilance-Erice Declaration on transparency, Erice Manifesto for global reform of the safety of medicines in patient care, By Waller and Evans. To convince the patient about the safe use of the drug the pharmacovigilance in future must be able to recognize the safe problems without investing much time. And also, pharmacovigilance methods can also be used to identify that which patients can develop ADRs and how they can develop ADR and for this the most important factor will be the use of the patients as a source of information in the field of pharmacovigilance. Software are mostly used for the reporting purpose and managements of ADRs. The most commonly used software"s are the following- Oracle Argus Safety, ArisG, Oracle adverse event reporting, PvNET, repClinical.

Key Words: ArisG, PvNET, repClinical

SPP006

Role of Omega 3 Fatty Acids in Curing Diseases

Sarovar Reddy Vantimitta

Annamacharya college of Pharmacy, Rajampet, Annamaiah District, AP

ABSTRACT

Omega-3 fatty acids (omega-3s) are polyunsaturated fats that perform important functions in human body as our body can‟t produce the amount of omega-3s you need to survive. So, omega-3 fatty acids are essential nutrients, meaning that one could need to get them from the foods you eat in our daily life. There are three main types of omega-3 fatty acids, EPA, eicosapentaenoic acid is a "marine omega-3" because it‟s found in fish, DHA, docosahexaenoic acid is a "marine source and is found in fish, and ALA, alpha-linolenic acid is found in plants. Omega-3 fatty acids have many potential benefits for your cardiovascular health. One key benefit is that they help lower your triglyceride levels. Too many triglycerides in your blood hypertriglyceridemica raises your risk of atherosclerosis, and through this, can increase your risk of heart disease and stroke. So, it‟s important to keep triglyceride levels under control. In addition, omega-3s may help you by raising your HDL, good cholesterol and lowering your blood pressure, helps reduce joint inflammation in rheumatoid disease, helps nourish brain and eyes functions, helps prevent and alleviate dementia, depression, asthma, migraine, and diabetes, and helps reduce the risk and preventing heart disease and ischemic stroke. They have important role in brain development in infancy while consumed by pregnant for your growing baby. It's important for their brain development and future thinking and reasoning skills. In asthma disease the children have less chances of symptoms when kids are better protected when they eat more foods like soyabean and corn oils.

Key Words: Omega-3 fatty acids, preventing heart disease and ischemic stroke, soyabean and corn oils, triglycerides, eicosapentaenoic acid and reduce joint inflammation.

SPP007

"Sacubitril/Valsartan Effects and Post Discharge Outcomes among Heart Failure Patients with Reduced Ejection Fraction"

Shobila Pranathi, Mamidi Mounika

Department of Pharmacy Practice

KVSR Siddhartha College of Pharmaceutical Sciences

ABSTRACT

Our study aims to assess the post discharge renal outcomes among heart failure patients supplemented with sacubitril/valsartan. The study procedure involves the recruitment of 82 patients of age group 20-85years who were discharged with Sacubitril/Valsartan. The study utilizes a structured data collection form for the study to proceed. Recorded demographic, medical, and treatment details, as well as relevant test results. Clinical parameters such as systolic blood pressure, diastolic blood pressure, heart rate declined from mean baseline to follow-up 2($p<0.0001$). Over the follow up period , serum sodium and serum potassium levels remained relatively stable with minute deviation indicating no significant effect on electrolytes imbalance and where as serum urea declined from a mean baseline of40.48mg/dL to 19.61mg/dL at follow-up 2; serum creatinine also declined from a mean baseline of 2.53mg/dL to 0.93mg/dL at follow-up 2; whereas eGFR raised from a mean baseline of 40.09ml/min/1.73m2 to 114.06ml/min/1.73m2 at follow-up 2 showing an inclination of 184%. Gender wise analysis has also showed that both males and females treated with sacubitril/valsartan had significant improvements in blood pressure and in renal parameters such as serum urea, creatinine and eGFR. From the above data it is evident that Sacubitril/Valsartan has improved eGFR, reducing the risk of hospitalization and risk of death, reduced the risk of renal outcomes by improving eGFR and by reducing serum urea and creatinine levels in heart failure patients with reduced ejection fraction.

Key Words: Heart failure, HFrEF, cardiovascular events, renal outcomes, hospitalization. High blood pressure, Serum creatinine, Serum urea.

SPP008

The Correlation between Thyroid Hormones and Serum Calcium and Phosphorus Levels

Anne Lakshmi Pavani*, Katragadda Pradeepthi, P. Lakshmi Prasanna,
Vemareddy Giridhar Raju, Sai Praveena Yerriboina, Dasari Zenith
Department of Pharmacy Practice,
KVSR Siddhartha College of Pharmaceutical Sciences

ABSTRACT

The thyroid hormones are essential for skeletal development, maturation and have an important physiological role in the maintenance of bone structure and strength. Thyroid dysfunction can significantly impact bone health, though its role in osteoporosis and fracture risk is often underestimated. A cross sectional study was carried out in a total of 100 cases of thyroid subjects aged 18-65 years involving both male and female individuals. We measured thyroid function, serum calcium, and phosphorus levels, analyzing correlations between these variables. Indicated a weak, positive correlation between serum calcium, phosphorus, and total T3 and T4 levels, but these were not statistically significant. In contrast, a strong, negative correlation was found between serum calcium and phosphorus levels with TSH levels ($p<0.001$ for calcium, $p<0.01$ for phosphorus), suggesting that higher TSH levels are associated with lower serum calcium. The study also revealed that medication adherence is crucial, 95% of individuals with abnormal serum calcium or phosphorus levels were not taking their thyroid medications. Statistical tests confirmed a significant relationship between medication use and serum calcium ($p<0.001$) and phosphorus ($p=0.001$) levels. The study concludes that hypothyroidism is associated with lower serum calcium and phosphorus levels, leading to hypocalcemia and hypophosphatemia, while hyperthyroidism is linked to elevated levels, resulting in hypercalcemia and hyperphosphatemia. Adherence to thyroid medication is essential for maintaining optimal bone health.

Key Words: Thyroid hormones, Supplementation, bone resorption, osteoporotic fractures, serum calcium, Serum phosphorus.

SPP009

Assessment of prevalence and factors influencing diabetic foot ulcers in diabetic patients

Lohitha karri, Likhita Suma Parasa, Katragadda Pradeepthi, Anne Pavani

Department of Pharmacy Practice, KVSR Siddhartha College of Pharmaceutical Sciences

ABSTRACT

Diabetic foot ulcers are the wounds that develop on the foot of a diabetic patient which leads to sore formation. This prospective observational study investigated the factors contributing to the occurrence of diabetic foot ulcers, with a particular focus on gender differences. The study enrolled 250 participants, comprising 172 males and 78 females, and aimed to identify key factors influencing the development of these ulcers.

The results indicated a high prevalence of diabetic foot ulcers, affecting 82% of the study population. Males exhibited a significantly higher incidence of foot ulcers (68.8%) compared to females (31.2%), particularly among those with a diabetes duration of 5-10 years and an average HbA1C level of 8.1%.

The study identified elevated HbA1C levels, hypertension (HTN), and coronary artery disease (CAD) as primary contributors to the increased susceptibility. Furthermore, the study revealed a concerning lack of foot self-care, with only 19.6% of participants actively caring for their feet. The study concludes that males are more susceptible to diabetic foot ulcers than females, and elevated HbA1C levels are a significant risk factor. These insights highlight the importance of targeted interventions to reduce the burden of diabetic foot ulcers.

Key Words: DFU- diabetic foot ulcer, HTN- Hypertension,CAD- coronary artery disease, T2DM- Type II diabetes mellitus

SPP010

Effect of Incretin Mimetics on Type-2 Diabetes Mellitus and Weight Loss Management

Sreya Chitiprolu, Kovida chanumolu, Jyothika Chinta, Leela Jyothi Bathina, G. Vijay Kumar

Department of Pharmacy Practice, KVSR Siddhartha College of Pharmaceutical Sciences

ABSTRACT

The term incretin refers to peptide hormones. Incretins are gut hormones that are secreted from enteroendocrine cells into the blood within minutes after eating to regulate insulin secretion in response to a meal. Incretin mimetics are the injectable medications that are given subcutaneously except Rybelsus (semaglutide) which is available as oral medication and are used in management of type-2 diabetes mellitus. Additionally, incretin mimetics have been shown to be associated with beneficial effects on cardiovascular risk factors such as weight loss, decrease in blood pressure and changes in lipid profile.They are two types of incretins that has been characterized, namely Glucose-dependent insulinotropic peptide(GIP) and Glucagon like peptide-1(GLP-1). Both of these incretins are deactivated by dipeptidyl peptidase-4(DPP4). In general incretin mimetics work by binding to and activating glucagon-like peptide-1 (GLP-1) receptors on pancreatic beta-cells following which insulin secretion and synthesis are initiated. They have no insulinotropic activity at lower glucose concentrations, the risk of hypoglycemia is low. The key drugs included under this class are-Dulaglutide, Liraglutide, Semaglutide, Exenatide, Tizepatide. The drug exenatide was the first approved drug for type-2 diabetes mellitus in 2005. Incretin mimetics have the box warning (FDA's most serious warning) is about the increased risk of thyroid cancer, so it should be avoided in patients with personal or family history of thyroid cancer.

Key Words: Incretin mimetics, Glucagon-like peptide-1(GLP-1), Cardiovascular risk factors, Weight loss

SPP011

Effect of Sglt2 Inhibitors on Cardiovascular Function and Renal Function

Sindhu Kamma, Kavya Siddineni, Janmiya Sk, Sole Sowmya, Ghanta Vijay kumar

Department of Pharmacy Practice,

KVSR Siddhartha College of Pharmaceutical Sciences

ABSTRACT

Sodium-Glucose Cotransporter 2 (SGLT2) inhibitors are oral medications used in managing Type 2 diabetes mellitus (T2DM). By inhibiting SGLT2 proteins in the kidneys, these drugs reduce glucose reabsorption and increase urinary glucose excretion, effectively lowering blood glucose levels. Beyond glycemic control, SGLT2 inhibitors have demonstrated significant cardiovascular and renal benefits, as evidenced by clinical trials such as DAPA-HF and EMPEROR-Reduced. These trials showed reductions in cardiovascular mortality, heart failure hospitalizations, and slowed renal disease progression, even in non-diabetic patients. Key drugs in this class include canagliflozin, dapagliflozin, empagliflozin, and ertugliflozin, which also promote weight loss, lower HbA1c, and decrease blood pressure. However, their use is associated with risks like genitourinary infections, diabetic ketoacidosis, acute kidney injury, and a higher risk of amputations and fractures. Cardiovascular and renal benefits of SGLT2 inhibitors are attributed to their hemodynamic effects, including reduced afterload and preload, improved cardiac metabolism, and arterial vasodilation. These effects are enhanced by diuresis, natriuresis, and a shift in fuel metabolism towards ketogenesis. Additionally, SGLT2 inhibitors may modulate Na+/H+ exchange and influence adipokine production. In summary, SGLT2 inhibitors are effective in managing hyperglycemia in T2DM while providing substantial cardiovascular and renal protection. The benefits and risks must be balanced with careful patient selection and monitoring to optimize outcomes.

Key Words: SGLT2 Inhibitors, renal and cardio disorders, Glucosuria