ADITYA
COLLEGE OF PHARMACY
An AUTONOMOUS Institution
Approved by PCI • Affiliated to JNTUK • Accredited by NAAC with "A"Grade
Ph: +91 99498 76664
Email: office@acop.edu.in
Website: www.acop.edu.in

TO WHOM IT MAY CONCERN

This is certify that Number of books and chapters in edited volumes/books published for the academic year **2023-24**is **03** and paperspublished in national/ international conference proceedingsperteacherpublished for the academic year **2023-24** is **11.**

Numberofbooksandchaptersineditedvolumes/bookspublished andpaperspublished in nationalfor the academic year2023-24

Academic Year	2023-24
Number of books and chapters in edited volumes published	3

Total number ofpapersinnational/internationalconferenceproceedings for the academic year 2023-24

Academic Year	2023-24
Conference proceedings	11

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM- 533 437

ADITYA COLLEGE OF PHARMACY(A)

(An Autonomous Institution)

Approved by PCI, New Delhi, *Permanently Affiliated to JNTUK, Kakinada
Accredited by NAAC A Grade and CGPA of 3.24
Recognized by UGC Under Sections 2(f) of the UGC Act, 1956
Aditya Nagar, ADB Road, Surampalem, Gandepalli Mandal, East Godavari - 533437, A.P
Ph. 99498 76664, Email: office@acop.edu.in, www.acop.edu.in

Number of books and chapters in edited volumes/books published for the academic year 2023-24

Sl. No.	Name of the teacher	Title of the book/chapters published	Year of publication	ISBN/ISSN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	Mr. Prakash Nathaniel Kumar Sarella, Mrs. Vinny Therissa Mangam, Vyshnavi K	Chromatographic techniques for pharmaceutical analysis (Futuristic Trends in Pharmacy & Nursing, Volume 3, Book 19, Part 2, Chapter 1)	2024	978-93-6252-900-8	Aditya College of Pharmacy	Iterative International Publishers (IIP)
2	Dr. Divya Narla, Dr. Uday Kumar Thummala	Innovations in pharmaceutical formulation development: harnessing process analytical technology (pat) for future healthcare Futuristic Trends in Pharmacy & Nursing Volume 3, Book 19, Part 2, Chapter 4)	2024	978-93-6252-900-8	Aditya College of Pharmacy	Iterative International Publishers (IIP)
3	Dr. Divya Narla, Mr. Prakash Nathaniel Kumar Sarella	Advances in analytical techniques for personalized medicine Futuristic Trends in Pharmacy & Nursing Volume 3, Book 19, Part 2, Chapter 5)	2024	978-93-6252-900-8	Aditya College of Pharmacy	Iterative International Publishers (IIP)

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM 533 437

ADITYA COLLEGE OF PHARMACY(A)

(An Autonomous Institution)

Approved by PCI, New Delhi, *Permanently Affiliated to JNTUK, Kakinada
Accredited by NAAC A Grade and CGPA of 3.24
Recognized by UGC Under Sections 2(f) of the UGC Act, 1956
Aditya Nagar, ADB Road, Surampalem, Gandepalli Mandal, East Godavari - 533437, A.P
Ph. 99498 76664, Email: office@acop.edu.in, www.acop.edu.in

Number of papers in national/ international conference proceedings for the academic year 2023-24

Sl. No.	Name of the teacher	Title of the papers in national/ international conference proceedings	Year of publication	ISSN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	Dr. K Venkateswarlu	The Pharmacodynamic studies of the optimized Vancomycin HCl Tablets and capsules	2024	2583-2042	Aditya College of Pharmacy	Journal of clinical and Pharmaceutical research
2	Mrs. A Swetha, Mrs. M Seshasai Mrs. Durga, P Prasanthi	Formulation and evaluation of Herbal soap with Moringa Oliefera leaf extract for skin ailment	2024	2583-2042	Aditya College of Pharmacy	Journal of clinical and Pharmaceutical research
3	Mrs K Keethi sai	Formulation and evaluation and solid dispersion of phenytoin by solvent evaporation technique	2024	2583-2042	Aditya College of Pharmacy	Journal of clinical and Pharmaceutical research
4	Ms K Sai Priyanka	Method development for validation for Retinovir and Dharunavir by RP-HPLC method	2024	2583-2042	Aditya College of Pharmacy	Journal of clinical and Pharmaceutical research

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM 533 437

ADITYA COLLEGE OF PHARMACY(A)

(An Autonomous Institution)

Approved by PCI, New Delhi, *Permanently Affiliated to JNTUK, Kakinada
Accredited by NAAC A Grade and CGPA of 3.24
Recognized by UGC Under Sections 2(f) of the UGC Act, 1956
Aditya Nagar, ADB Road, Surampalem, Gandepalli Mandal, East Godavari - 533437, A.P
Ph. 99498 76664, Email: office@acop.edu.in, www.acop.edu.in

5	Mr. Prakash Nathaniel Kumar Sarella	Design, Development, evaluation of Tenofovir alfenamide furmarate emugel	2024	2583-2042	Aditya College of Pharmacy	Journal of clinical and Pharmaceutical research
6	Mrs M Vinny Therisa	Advancement in Pharmacoknetic studies : microsampling techniques Revalutionizing blood sample collection	2024	2583-2042	Aditya College of Pharmacy	Journal of clinical and Pharmaceutical research
7	Mrs V Bhargavi	Unmasking the physiology of postpartum Depression	2024	2583-2042	Aditya College of Pharmacy	Journal of clinical and Pharmaceutical research
8	Mrs K Gnaneswari	Evaluation of antipsychotic activity of ethanolic peel extract of Citrus limetta in mice model	2024	2583-2042	Aditya College of Pharmacy	Journal of clinical and Pharmaceutical research
9	Mrs S. Tirumala Devi	Evaluation of in-vivo anti enemic activity of ethanolic leaf extract of neolamarckia Kadamba	2024	2583-2042	Aditya College of Pharmacy	Journal of clinical and Pharmaceutical research
10	Dr Amit Kumar	Case Report on Drug induced orthostatic hypotension and vertigo hypertensive and beningn prosttastic hyperplasia patient	2024	2583-2042	Aditya College of Pharmacy	Journal of clinical and Pharmaceutical research

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM- 533 437

ADITYA COLLEGE OF PHARMACY(A)

(An Autonomous Institution)

Approved by PCI, New Delhi, *Permanently Affiliated to JNTUK, Kakinada
Accredited by NAAC A Grade and CGPA of 3.24
Recognized by UGC Under Sections 2(f) of the UGC Act, 1956
Aditya Nagar, ADB Road, Surampalem, Gandepalli Mandal, East Godavari - 533437, A.P
Ph. 99498 76664, Email: office@acop.edu.in, www.acop.edu.in

11	Dr. Ajnu K Abraham	Factors effecting the quality of life of a patient ina tertiary care hospital	2024	2583-2042	Aditya College of Pharmacy	Journal of clinical and Pharmaceutical research

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM- 533 437

ADITYA COLLEGE OF PHARMACY SURAMPALEM

CHROMATOGRAPHIC TECHNIQUES FOR PHARMACEUTICAL ANALYSIS

Abstract

This chapter serves as a comprehensive review of various chromatographic techniques employed in pharmaceutical analysis. It delves into the principles, instrumentation, and factors influencing separation for essential chromatographic methods, including High Performance Liquid Chromatography (HPLC), Gas Chromatography (GC), Thin Layer Chromatography (TLC), and other significant techniques like Size Exclusion Chromatography, Ion Exchange Chromatography, Supercritical Fluid Chromatography, and Chiral Chromatography. Emphasizing the importance of HPLC and GC, the chapter explores their extensive applications in drug analysis, impurity profiling, assay determination, and drug stability studies, ensuring the quality and safety of pharmaceutical products. The simplicity and cost-effectiveness of TLC find prominence in qualitative analysis, compound identification, and purity checks. Method validation, a critical aspect in chromatographic analysis, is meticulously addressed to highlight its role in ensuring accuracy, precision, specificity, and robustness in pharmaceutical research and quality control. As an essential resource in the book, this chapter offers valuable insights into cutting-edge advancements and best practices in chromatographic techniques for pharmaceutical analysis, aiding researchers and analysts in staying at the forefront of the field.

Keywords: Chromatographic Techniques; Gas Chromatography; High Performance Liquid Chromatography; Method Validation; Pharmaceutical Analysis; Thin Layer Chromatography

Authors

Sravani Ratnam Arji
Lecturer
Department of Chemistry
Government College (A)
Rajahmundry, India.
pharmafeiringer2019@gmail.com

Vyshnavi K
Lecturer
Department of Chemistry
Government College (A)
Rajahmundry, India.
vaishnavik@gcrjy.ac.in

Prakash Nathaniel Kumar Sarella
Associate Professor
Department of Pharmaceutics
Aditya College of Pharmacy
Surampalem, India.
sarellaprakash@acop.edu.in

Vinny Therissa Mangam
Assistant professor
Department of Pharmaceutical Analysis
Aditya College of Pharmacy
Surampalem, India.
vinnytherissa@gmail.com

INNOVATIONS IN PHARMACEUTICAL FORMULATION DEVELOPMENT: HARNESSING PROCESS ANALYTICAL TECHNOLOGY (PAT) FOR FUTURE HEALTHCARE

Abstract

The landscape of pharmacy and nursing is rapidly evolving, driven by technological advancements that shape the formulation and administration of medicines. This chapter delves into the cutting-edge realm of Process Analytical Technology (PAT) and its pivotal role in shaping the future of pharmaceutical formulation development. PAT revolutionizes the way pharmaceutical products are designed, analyzed, and produced by enabling real-time monitoring, control, and optimization of manufacturing processes. This chapter explores recent advances in PAT, including spectroscopic techniques, sensor technologies, data analytics, and quality-by-design (QbD) approaches.

Keywords: Process Analytical Technology; Pharmaceutical formulation; Real-time monitoring, Quality-by-design, Advanced analytics.

Authors

Uday Kumar Thummala
Professor,
Department of Pharmaceutics
Aditya College of Pharmacy
Surampalem, India
udaykumar.chowdary16@gmail.com

Divya Narla
Associate Professor,
Department of Pharmaceutical Analysis
Aditya College of Pharmacy
Surampalem, India
divyanarla@gmail.com

ADVANCES IN ANALYTICAL TECHNIQUES FOR PERSONALIZED MEDICINE

Abstract

The chapter "Advances in Analytical Techniques for Personalized Medicine" explores the transformative role of analytical methods in tailoring medical treatments to individual patients. Personalized medicine, a paradigm shift in healthcare, is driven by the understanding that each patient's genetic makeup, molecular profile, and lifestyle factors influence treatment responses. Genomic and proteomic analyses enable identification of biomarkers that guide treatment stratification, optimizing therapeutic outcomes. Pharmacogenomics utilizes genetic variations to predict drug metabolism, enabling precise drug selection and dosage adjustment. The interplay between patients' microbiomes and treatment responses is uncovered through advanced microbiome analysis, contributing to personalized therapies. Metabolomics provides diagnostic insights by profiling metabolic signatures associated with diseases and treatment efficacy. Cutting-edge imaging techniques allow non-invasive tracking of disease progression and response to therapies. Point-of-care diagnostics and wearable sensors empower real-time patient monitoring, enhancing personalized care. Bioinformatics and data integration facilitate meaningful interpretation of multi-omics data, aiding clinical decision-making. The chapter also addresses ethical considerations surrounding patient data privacy and regulatory challenges. Case studies underscore successful applications of analytical techniques in personalized cancer therapies and rare disease treatments. In a rapidly advancing landscape, this chapter outlines the potential and challenges of integrating analytical innovations into personalized medicine, revolutionizing patient-centered healthcare.

Authors

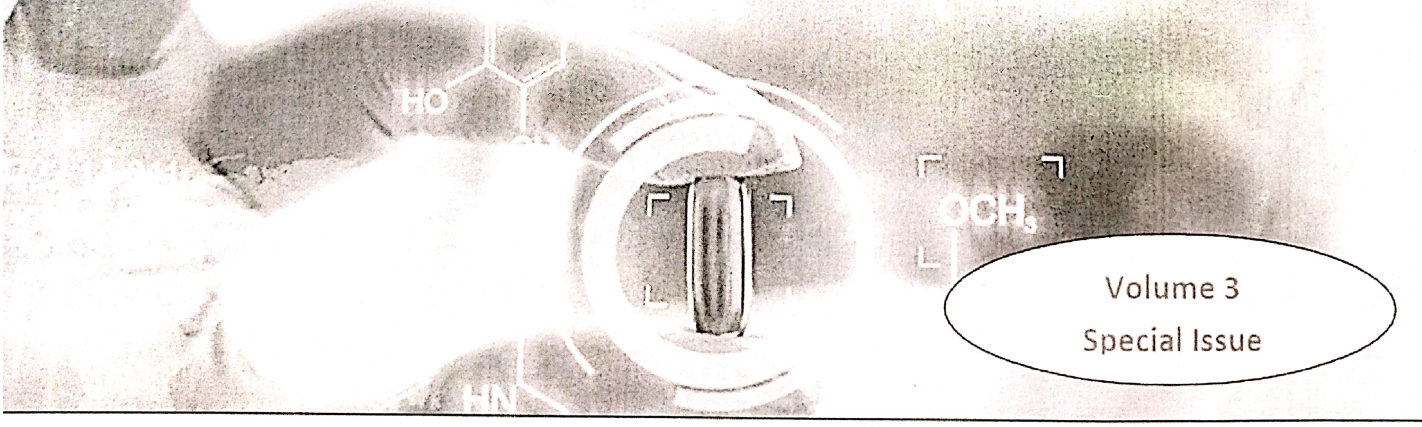
Divya Narla
Associate Professor,
Department of Pharmaceutical Analysis
Aditya College of Pharmacy
Surampalem, India
divyanarla@gmail.com

Prakash Nathaniel Kumar Sarella
Associate Professor,
Department of Pharmaceutics
Aditya College of Pharmacy
Surampalem, India
sarellaprakash@acop.edu.in

Online ISSN No: 2583-2042

JOURNAL OF CLINICAL AND PHARMACEUTICAL RESEARCH

An International Open Access Peer Reviewed Online Journal



Volume 3
Special Issue

www.jcpr.in

PHIDAGE-202

Universal Episteme Publications-India

ABSTRACTS OF PHIDAGE-2023

A National Conference on

PHARMACEUTICAL INDUSTRY IN THE DIGITAL AGE: TRENDS AND OPPORTUNITIES

Organized by

ADITYA GROUP OF PHARMACY COLLEGES

ADITYA NAGAR, ADB ROAD, SURAMPALEM,

ANDHRA PRADESH, INDIA.

SMALL PARTICLES BIG IMPACT: NANO LIPID CARRIERS STEPPING INTO THE SPOTLIGHT

B AMEETHA

AU College of Pharmaceutical Sciences, Andhra University, Visakhapatnam, Andhra Pradesh, India.

Abstract: Linagliptin (LGP) is a dipeptidyl peptidase 4-inhibitor (DPP-4) that is used to treat type II diabetes and is essential for controlling blood glucose levels. However, the oral bioavailability of this medication is about 30%, which limits its efficacy. The primary goal of the current study was to design and characterize linagliptin-loaded Nano-structured lipid carriers (NLCs) for transdermal drug administration by Hot High-Pressure Homogenization in order to obtain the best novel formulation using central composite design. To enhance the bioavailability of linagliptin, phospholipids like glyceryl monostearate, oleic acid along with the surfactants like tween 80, and poloxamer 407 were used. GMS:LGP (lipid: drug), poloxamer 407 and tween 80 were taken as independent variables and their responses were evaluated on particle size (nm), entrapment efficiency (%, EE), zeta potential (ZP) and polydispersity index (PDI). Optimized LGP-NLC formulation was evaluated for in vitro and ex vivo permeation studies. This formulation showed 180.5 nm of particle size, 89.2% of EE, exhibited a negative zeta potential of 25.9 mv and PDI of 0.34. In the morphological analysis conducted through SEM the observed structures were characterized by a distinct spherical shape with size 200 nm. They showed a sustained release of LGP (95.08 in 36 h) than pure LGP. The ex vivo skin permeation result exhibited a significantly enhanced flux than pure LGP. It was proved that Linagliptin NLC can get permeated through the skin. These findings revealed that Linagliptin NLC formulation could be an alternative delivery system of LGP to systemic delivery to enhance bioavailability. Future scope for the present research can be done through transdermal delivery carriers like microneedles, scaffolds, patches through which it can be administered.

Keywords: Linagliptin, Nanostructured Lipid Carriers, Transdermal Drug Delivery.

THE PHARMACODYNAMIC STUDIES OF THE OPTIMIZED VANCOMYCIN HCl TABLETS AND CAPSULES

KUDIPUDI VENKATESWARLU

Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India.

Abstract: Vancomycin HCl is a glycopeptide antibiotic which is poorly absorbed into the systemic circulation in spite of its water solubility. Thus, it is more practical to measure the concentration of vancomycin HCl in the faecal matter which provides insights about the drug concentration. Hence, pharmacodynamic studies are carried out using faecal matter of rabbits. In vivo studies were carried out by using 12 healthy rabbits of either sex and were randomly divided into three groups consisting of four rabbits in each group. An open label, balanced, randomized, three treatment study was used. Faecal samples were collected from each animal before administration of treatments for using as blank value and at three different periods (12 hours, 24 hours and 48 hours). The faecal samples were analysed at 277 nm against the blank faecal samples. Total drug excreted from RCHP3C8, RH2C10 and oral solution of pure drug were 64%, 60.9% and 71.5% of vancomycin HCl. The results from two way ANOVA indicated that the group means are different from total population mean at 5% level of significance as evident from the p value (<0.05). Hence, H_0 is rejected as the calculated F ratio is greater than the table F value at 5% level of significance. As alternative hypothesis is accepted, Tukey-Kramer test was performed for identifying the significant difference between the groups.

Keywords: Vancomycin HCl, Pharmacodynamic Studies, Faecal Samples, Tukey-Kramer Test.

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM- 533 437

FORMULATION AND EVALUATION OF HERBAL SOAP WITH MORINGA OLEIFERA LEAF EXTRACTS FOR SKIN AILMENTS

ARUMILLI SWETHA, M. SESHA SAI DURGA, P. PRASANTHI

Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India.

Abstract: Plant-based treatments have been utilised as a cure for a variety of human ailments since ancient times. Moringa oleifera, also known as the drumstick tree in India, is a well-known plant that contains several useful compounds such as sterols, tannins, flavonoids, alkaloids, saponins and terpenoids. Moringa preserves and increases collagen, decreasing premature ageing indications and rebuilding skin cells. It revitalises dull, tired skin by balancing sebum levels and making the skin glow naturally. The present goal was to make soap out of moringa leaf extracts because most commercial soaps contain chemicals and synthetic substances that can be unpleasant or even harmful to the skin. Herbal products serve two functions: body care and the naturally healthy skin. In this study, the cold process approach is applied to make herbal soap. Coconut oil, glycerine, Moringa oleifera extract, lemon grass oil and sodium hydroxide were used to manufacture herbal soap and the various extracts were then mixed into the primary saponification process. After the herbal formulation was completed, it was evaluated for pH, moisture content, foaming index, foam retention time, and high temperature stability, among other things. Various studies have revealed that these herbal plant extracts have anti-bacterial, anti-inflammatory and anti-fungal properties. The findings for the herbal soap show that these soaps are cost-effective, convenient, and do not cause skin irritation.

Keywords: Moringa, Herbal soap, Cosmetics.

ASSESSMENT OF ANTI-CANCER DRUG RESISTANCE AND QUANTIFICATION OF DRUG RESISTANCE GENE EXPRESSION OF CANCER CELL LINES TREATED WITH NANOPARTICLE ENCAPSULATED ANTI-CANCER DRUGS

VAMSI RAPAKA

AU College of Pharmaceutical Sciences, Andhra University, Visakhapatnam, Andhra Pradesh, India.

Abstract: Nanoparticle-based drug delivery systems have gained prominence for their potential to enhance drug efficacy and overcome resistance mechanisms. In this investigation, we employed a diverse panel of cancer cell lines representing various cancer types to evaluate their response to anti-cancer drugs encapsulated within nanoparticles. The assessment involved determining the sensitivity of these cell lines to the treatment and identifying any variations in resistance profiles. To gain insights into the molecular mechanisms underlying drug resistance, we focused on quantifying the expression levels of key drug resistance genes. Through advanced molecular biology techniques such as qPCR and RNA sequencing. We measured the gene expression changes induced by the nanoparticle-encapsulated drugs. This analysis allowed us to identify specific genes and pathways associated with resistance, providing valuable information for targeted therapeutic interventions. Our findings contribute to a deeper understanding of drug resistance mechanisms in cancer and offer potential strategies for improving the effectiveness of nanoparticle-based anti-cancer drug delivery systems. Ultimately, this research may pave the way for more personalized and efficacious cancer treatments, bringing us one step closer to combating drug resistance and improving patient outcomes in oncology.

Keywords: Nanoparticles, Anti-cancer, Drug resistance, qPCR.

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM 533 437

ADVANCES IN TRANSDERMAL DRUG DELIVERY SYSTEM

SAROVAR REDDY VANTIMITTA

Annamacharya College of Pharmacy, Rajampet, Andhra Pradesh, India.

Abstract: One of the most successful drug delivery system with tapered side effects is the transdermal drug delivery since decades. It is the most convenient route for most of the drugs and patient easy administering route of drug delivery system. It bypasses the enterohepatic circulation, there by providing a more reliable clinical action. Some of the most common examples from past include nicotine patches or patches that contain painkillers, such as prescription opioids. The requirements to fabricate this route of drug delivery is polymer matrix, membrane, drug, penetration enhancers, pressure- sensitive adhesives, backing laminates, release liner. Aceclofenafc, diclofenac, zidovudine, fentanyl and Buprenorphine, Nitroglycerine, Selegiline, Methylphenidate, Scopolamine, Hormones, Clonidine etc are the active ingredients. Various approaches of this delivery could include laser, radio frequency, iontophoresis, microneedle, jet injector, ultra sound, chemical enhancers, prodrug, eutectic system, reservoir, matrix, adhesive, microreservoir etc. TDDS deserves the advantages of prolonged drug action, maintaining good plasma levels, reduction in dosing frequency, improvement in bioavailability etc. Ethyl cellulose, carboxy methyl cellulose, hydroxypropyl metyl cellulose, xanthane gum, sodium alginate, chitosan and mucilage are used as polymers in the preparation of dosage form. The fabricated dosage forms were evaluated for thickness, weight uniformity, content uniformity, folding endurance, microscopic study, swellability, pH, hardness, physical appearance, flatness, percentage of moisture content, moisture uptake, water vapour transmission study and tensile strength.

Keywords: Patches, Hydroxyl Propyl Methyl Cellulose, Drug Action, Folding Endurance.

FORMULATION AND EVALUATION OF SOLID DISPERSION OF PHENYTOIN BY SOLVENT EVAPORATION TECHNIQUE

KAMMA KEERTHISAI

Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India.

Abstract: The aim of the present study is formulation and evaluation of phenytoin by making solid dispersion with polyvinyl alcohol and inclusion complexation with HPβ Cyclodextrin, β Cyclodextrin. Solid dispersion of Phenytoin is prepared with Solvent Evaporation method. Phenytoin belongs to BCS class II drug which is characterized by high membrane permeability, slow dissolution rate due to low aqueous solubility. It is an anti-epileptic or anti-convulsant and is used to treat wide variety of Seizures. The Phenytoin solid dispersions were prepared by solvent evaporation method at 1:0.25, 1:0.5, 1:0.75, 1:1, 1:1.25,1:1.5 ratios of Phenytoin to HP β CD, β CD and PVA. The prepared dispersions were evaluated by solubility studies, in-vitro dissolution studies, melting point determination, drug content uniformity, entrapment efficiency and FT-IR studies. Finally comparing all the formulations (P:HPβ F1-P:HPβ F6) (P: βF1-P βF6) & (P:PF1-P:PF6) formulation P:PF4 containing Phenytoin:Polyvinyl alcohol (1:1) shows better result at the end of 90 min with drug release 93.99%, hence it was selected as the best formulation. By release kinetic studies of best formulation of Phenytoin with zero order and first order we can say that the best formulation follows first order kinetics studies having r2 value 0.945 where as zero order release kinetics studies having r2 value 0.849. The results indicated as formulated solid dispersion tablets displayed better dissolution profiles as compared to existing commercial tablets.

Keywords: Phenytoin, Solubility, Permeability, Biowaivers, Antiepileptic.

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM 533 437

3D PRINTING: A PARADIGM SHIFT IN DRUG CUSTOMISATION

R. BHARATHKUMAR, N.SATISH, CH.NAGASURENDER

Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India.

Abstract: The emergence of 3D printing technology has ignited a paradigm shift in drug customization within the pharmaceutical industry. This revolutionary approach is poised to reshape how medications are formulated, manufactured, and administered. With 3D printing, pharmaceutical companies can now craft personalized drug dosages, complex dosage forms, and precise drug delivery systems tailored to individual patient needs. This abstract explores the transformative potential of 3D printing in redefining drug customization, highlighting its capacity to improve therapeutic outcomes, enhance patient adherence, and streamline drug development processes. As 3D printing continues to advance, it promises to usher in a new era of precision medicine, paving the way for more effective and patient-centric healthcare.

Keywords: 3D printing, CAD models, Slicing Software, 3D printer.

NOVEL DELIVERY METHODS FOR PROTEINS AND PEPTIDES

K.BHAGYASRI, S.SUPRIYA, K.PRASANNA

Emmanuel College of Pharmacy, Visakhapatnam, Andhra Pradesh, India.

Abstract: Proteins and peptides are viable prospects for the creation of novel therapies for a wide range of human illnesses. Proteins and peptides can be supplied at comparatively low concentrations for therapeutic benefits due to their very specialized method of action. This powerful medication is prescribed for a number of chronic illnesses, including cancer, hepatitis, diabetes, rheumatoid arthritis, and leukemia. Modern analytical methods and the development of biotechnology have aided in the identification and industrial-scale manufacture of protein and peptide medicines. A peptide is a condensed chain of amino acids having a known sequence, such as leuprolide. Clinical applications of pharmaceutical and biopharmaceutical products are constrained by a number of issues. The formulation of these treatments into secure and efficient delivery systems is the focus of ongoing work.

Keywords: Protein, Peptide, Drug delivery.

METHOD DEVELOPMENT AND VALIDATION FOR RITONAVIR AND DARUNAVIR BY RP-HPLC METHOD

KRUTHIVENTI SAI PRIYANKA

Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India.

Abstract: A new, simple, precise and accurate method was developed and validated for the simultaneous estimation of Ritonavir and Darunavir in tablet dosage form using RP- HPLC. The separation is achieved by using Xterra C18 (4.6*150mm,5µ) column. 0.1%TFA: methanol is used as mobile phase in a ratio of 60:40 at a flow rate of 1.0ml/min. The column is maintained at ambient temperature. The wavelength of both drugs measured at 220nm. Run time is maintained for 10 min. Retention time of Ritonavir and Darunavir was found to be 2.461min and 4.387min. Percentage assay of Ritonavir and Darunavir was found to be 99.59% and 99.96% respectively. Linearity lies from10µg/ml to 50µg/ml for ritonavir and 60µg/ml to 300µg/ml for darunavir. It is concluded that our method is capable of producing good sensitivity. This method is useful for routine analysis.

Keywords: Darunavir, RP-HPLC, Ritonavir.

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM- 533 437

MICROPARTICLES AND RECENT ADVANCES TARGETED FOR PULMONARY DRUG DELIVERY

TIKENDRA JIT DAS, PARTHAJEET KALITA

School of Pharmacy, The Assam Kaziranga University, Jorhat, Assam, India.

Abstract: Microparticles are tiny solid particles ranging from 1 to 1000 micrometers in size. Microparticles and nanoparticles are emerging areas for drug deliver and research for drug administration to patients in convenient way besides of conventional method. By minimizing side effects and enhancing therapeutic outcomes, targeted drug delivery systems have a significant impact on patient health; As a result, modern research has focused on particulate drug delivery systems. Nanoparticles and microparticles are important tools for targeted, delayed, and tissue-specific drug delivery. Microparticles are used to deliver drugs in a consistent way to specific sites without causing side effects, and to achieve an effective therapeutic concentration at the target site. When compared to other conventional methods, pulmonary drug delivery offers several benefits for the treatment of a variety of conditions. As well as targeting alveolar macrophages, inhaling drugs can be used to maintain a high concentration of drugs in the lungs to improve efficacy and shorten treatment duration. This reduces the risk of drug toxicities. Therefore, this kind of treatment can be useful in the treatment of many pulmonary and nonpulmonary diseases. Inhalable microparticles have been developed using new techniques and delivery devices. Furthermore, it may result in improved therapeutic effectiveness and patient compliance, resulting in improved quality of life and improved therapeutic outcomes for patients.

Keywords: Microparticles, Pulmonary Drug Delivery, Nanoparticles, Alveolar Macrophages.

DESIGN, DEVELOPMENT AND EVALUATION OF TENOFOVIR ALAFENAMIDE FUMARATE EMULGEL

PRAKASH NATHANIEL KUMAR SARELLA, PRAVALLIKA GODAVARI

Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India.

Abstract: To develop topical emulgel formulations of tenofovir alafenamide fumarate (TAF) for the treatment of HIV and assess their physicochemical properties, in vitro drug release, and stability. Twenty-five emulgel formulations (F1-F25) with varying concentrations of oil, emulsifier and polymer were prepared using an emulsification technique. The formulations were evaluated for particle size, polydispersity index, drug content, viscosity, pH, spreadability, extrudability and bioadhesion. In vitro drug release was assessed up to 18 hours. Stability studies were carried out on optimized formulations F8 and F25 at room temperature over 30 days. Skin irritation studies were performed on formulations F8 and F25 using rabbits. All formulations showed uniform color, homogeneity, consistency and no phase separation. Particle size ranged from 8-30 µm. Most formulations released >90% drug within 10 hours and followed first order or Higuchi release kinetics. Formulations F8 and F25 were stable for 30 days with <5% changes in viscosity, pH and drug content. Skin irritation tests found F8 and F25 non-irritating. The developed emulgel formulations showed favorable properties for topical delivery of TAF. Formulations F8 and F25 with prolonged release were optimized through stability and skin irritation studies. The emugels have potential as a patient-friendly dosage form for the sustained delivery of TAF to treat HIV infection.

Keywords: Tenofovir alafenamide fumarate, Topical Emulgel, HIV infection.

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM 533 437

ADVANCEMENTS IN PHARMACOKINETIC STUDIES: MICROSAMPLING TECHNIQUES REVOLUTIONIZING BLOOD SAMPLE COLLECTION

VINNY THERISSA MANGAM

Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India.

Abstract: Pharmacokinetic studies are indispensable in the pharmaceutical industry for assessing how drugs interact with the human body. Traditionally, these studies relied on venous blood draws, which can be invasive, inconvenient, and carry the risk of complications. However, recent advancements in microsampling techniques have transformed the landscape of pharmacokinetics. This work explores the emerging trends in pharmacokinetic studies, focusing on two innovative microsampling methods that include dried blood spot (DBS) and microdialysis. DBS involves collecting a small volume of blood (typically 10-50 µL) onto a filter paper, which is then dried and stored for analysis. Microdialysis, on the other hand, employs a minimally invasive probe to continuously sample interstitial fluid, providing real-time data on drug concentrations. These microsampling techniques offer several advantages. Firstly, they require significantly smaller sample volumes compared to traditional methods, reducing the stress on study participants and the risk of complications. Secondly, they enable more frequent and convenient sampling, allowing for better characterization of drug concentration-time profiles. Thirdly, they offer opportunities for remote monitoring, reducing the need for patients to visit clinical sites frequently.

Keywords: Pharmacokinetic studies, Microsampling techniques, Dried blood spot (DBS), Microdialysis.

EXPLORING THE VERSATILITY OF TARO STARCH AS A PROMISING BIOPOLYMER IN THE PHARMACEUTICAL AND FOOD INDUSTRIES

SUSHANTA SARMAH, KASHMIRI SONOWAL, BISWAJIT BHUYAN, TAMOSWAMA SAIKIA

School of Pharmacy, The Assam Kaziranga University, Jorhat, Assam, India.

Abstract: Colocasia esculenta is a tropical tuber crop mainly cultivated due to it edible starchy corm. According to many studies, taro flour has a high carbohydrate content, a high water absorption capacity, a lower protein content, and a higher foaming capability than other flours. In the pharmaceutical sector, taro starch has shown potential as a pharmaceutical excipient, offering advantages such as good binding properties, controlled drug release, and biocompatibility. Its compatibility with various drug formulations and its ability to modulate drug release kinetics make it a valuable component in tablet and capsule manufacturing, enhancing drug stability and bioavailability. Furthermore, the usage of novel starch has grown in recent years because to the low cost, plentiful availability, and biodegradability of taro starch, which aligns with the rising need for green pharmaceutical products. In the food industry, taro starch serves as an excellent thickening, gelling, and stabilizing agent due to its high amylopectin content. It enhances the texture and mouth feel of various food products, ranging from sauces and soups to bakery items and dairy products. Taro starch also contributes to gluten-free and clean label trends, making it suitable for consumers with dietary restrictions. This review discusses the recent advancements in taro starch research, highlighting its potential as a versatile biopolymer in pharmaceutical and food applications. It emphasizes the need for further studies to explore its physicochemical properties, processing techniques, and industrial scalability. The utilization of taro starch can not only drive innovation in these sectors but also promote sustainability and reduce the reliance on synthetic polymers, aligning with the global push for more environmentally friendly practices.

Keywords: Colocasia esculenta, Taro Starch, Biopolymer, Biodegradability.

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM 533 437

EVALUATION OF POLYHERBAL FORMULATION FOR HEPATOPROTECTIVE ACTIVITY AGANIST ANTI TB DRUGS INDUCED HEPATOTOXICITY ON ALBINO RATS

K.SRIDEVI

Jawaharlal Nehru Technological University, Kakinada, Andhra Pradesh, India.

Abstract: In treatment of tuberculosis, Isoniazid (INH) and rifampicin (RIF) are used in the first line of treatment and produces hepatotoxicity as their adverse effect. The present study was designed to evaluate hepatoprotective activity of poly herbal formulation (Andrographispaniculata, Phyllanthusemblica, Cinnamomumzeylanicum) in Wistar albino rats using Anti- TB drugs induced hepatic damaged experimental animals. Anti- TB drugs (Isoniazid 50 mg/kg + Rifampicin 100 mg/kg b.w, p.o) was co-administered daily to induce hepatotoxicity. Poly herbal formulation (200 mg/kg and 400 mg/kg, p.o) and liv-52 syrup (50ml/kg, p.o.) were administered daily for 28 days. The degree of hepatoprotection was measured by estimating serum glutamate oxaloacetate transaminase (SGOT), serum glutamate pyruvate transaminase (SGPT), serum alkaline phosphatase (SALP), bilirubin, plasma protein and the histopathological parameters were also determined. The results showed the PHF(poly herbal formulation) treated group has significantly reduced the serum enzymes, bilirubin, plasma protein production and improved histological parameters by reducing liver necrosis. In conclusion, this study strongly indicated that the polyherbal formulation exerts potential hepatoprotective action against anti- TB drugs induced hepatic damage in experimental animals which could be associated to their phytochemical constituents and antioxidant activity.

Keywords: Poly herbal formulation, Hepatoprotective, Anti- TB drugs, Liv-52 syrup.

UNMASKING THE PHYSIOLOGY OF POSTPARTUM DEPRESSION

VUYYURI BHAARGAVI

Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India.

Abstract: Postpartum depression (PPD) is a psychiatric disorder experienced by many new mothers after the childbirth. For many years maternal depression has been masked away assuming it as physical and emotional trauma related to childbirth. In recent era, PPD is believed to be a clinical complication of childbirth which not only impacts the psychological behaviour of mother leading to suicidal intentions but also negatively impacts the cognitive development of the child. Approximately 1 in 7 women develop PPD, which tend to last longer and affects the mother's relationship with the infant. The symptoms of PPD are usually manifested during the pregnancy hence it is classified as "Major Depression Disorder, with peripartum onset". The exact pathogenesis of PPD is currently unknown, but there are some theories which suggests the involvement of endocrine hormones, neuronal transmission, epigenetic factors, stress and inflammatory mechanisms. A decline in estrogen after birth is suspected as one of the pathogenic factors in PPD as it is involved in enhancing serotonin function and reducing inflammatory responses. Dysregulation of several other reproductive hormones like progesterone, oxytocin, prolactin, can dysregulate the levels of stress hormones like corticotrophin releasing hormone (CRH), adrenocorticotropic hormone (ACTH) leading to PPD. Polymorphisms in monoamine oxidase (MAO A), catechol-O-methyltransferase (COMT) and tryptophan hydroxylase 2 (TPH2) genes have also been implicated in PPD. Currently PPD is treated using antidepressant drugs, but there is a need to clearly understand the exact mechanism so that the treatment targets only PPD.

Keywords: Postpartum depression, Suicide, Pathogenesis, Hormones.

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM- 533 437

COMPREHENSIVE REVIEW ON GENE THERAPY

SOWJANYA GURUGUBELLI

Aditya Pharmacy College, Surampalem, Andhra Pradesh, India.

Abstract: Gene therapy is the therapeutic exchange of genetic material, such as DNA or RNA, with the aim of treating conditions brought on by inherited mutations or acquired abnormalities. Somatic gene treatments target cells not involved in reproduction, while germ line gene therapies target cells actively involved in reproduction. It is well known that there is some risk associated with gene therapies; however, the vast majority of these risks stem from the delivery system or technology available at the time the therapies were developed, not from the idea of using genes to treat illness itself. Gene therapy isn't just one operation; rather, it's a group of techniques designed to alter how our genes are expressed in our bodies. There are numerous methods for doing this. By correcting a genetic mutation or substituting a defective gene for a healthy copy of the gene, these treatments aim to treat or prevent disease. For numerous non-life-threatening disorders, gene therapy is now being researched. All of them, including the ones that have an impact on the patient's quality of life. There is justification for broadening the scope of treatments provided by the fact that there is not enough therapy accessible. This provides an over view of common methods used to transfer genes and various examples of their clinical applications.

Keywords: Gene therapy, Vectors, Adeno-associated virus, GIC, CAR-Tcell.

EVALUATION OF ANTI-PSYCHOTIC ACTIVITY OF ETHANOLIC PEEL EXTRACT OF CITRUS LIMETTA IN MICE MODEL

GNANESWARI KODI

Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India.

Abstract: The present study aims to research the anti-psychotic activity of Citrus limetta (sweet lime) peel extract where the active and most abundant constituent was found to be d-limonene which has many traditional applications and found to have neuroprotective role in alzheimer's, epilepsy, multiple sclerosis, anxiety and stroke thereby reducing stress and mood disorders. This activity was evaluated using mice behavioral models like photoactometer and forced swim test to check the locomotor activity, social withdrawal and T-maze for studying the working memory which represents the positive, negative and cognitive symptoms. The orally administered extract of Citrus limetta showed favorable outcome reducing the immobility and enhancing the social interaction and memory in psychotropic induced animal models. The test extract of Citrus limetta showed convincing results when compared with the standard drug Chlorpromazine along with the control group. Thus, it is concluded that Citrus limetta could be a possible source for psychiatric and neurological disorders.

Keywords: Citrus limetta, d-limonene, Neuroprotective, Anti-psychotic, Photoactometer, T-maze.

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM 533 437

EVALUATION OF IN-VIVO ANTI-ANEMIC ACTIVITY OF ETHANOLIC LEAF EXTRACT OF NEOLAMARCKIA CADAMBA

S.THIRUMALA DEVI

Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India.

Abstract: Neolamarckia cadamba is an evergreen tropical tree native to south and southeast Asia commonly known as Kadamba belongs to family Rubiaceae which has many medicinal properties as mentioned in many Indian medicinal literatures display for treating the diseases such as fever, cough, vomiting, diarrhoea, anemia, inflammation, microbial infections, diabetes, ulcers, leprosy, wounds and mental disorders. Preliminary phytochemical screening showed the presence of saponins, terpenes, sesquiterpenes glycosides, alkaloids. Anemic condition leads to reduced RBC count which affects tissue oxygenation and lowers the amount of haemoglobin [which is functional unit in RBC] than normal levels (13g/dL in male and 12g/dL). In the current study the in-vivo anti-anemic properties of ethanolic leaf extract of Neolamarckia cadamba has performed using rat model. Different concentrations of the extract (250mg/kg and 300mg/kg) showed increased RBC count, Haemoglobin content and % Haematocrit in comparison to control group which was observed using Haematology analyser apparatus.

Keywords: Neolamarckia cadamba, Anemia, Tissue oxygenation.

EVALUATION OF ANTIBACTERIAL, ANTHELMINTIC AND ANTIDIARRHOEAL ACTIVITIES OF ETHANOLIC AERIAL EXTRACT OF MIMOSA PUDICA LINN

RUCHI KUMARI

Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India.

Abstract: Mimosa Pudica is an important medicinal herbal plant, used for its medicinal uses against different types of diseases. Therefore present study was designed to investigate the antibacterial, anthelmintic and antidiarrhoeal activity of ethanolic aerial extract of Mimosa Pudica Linn. Antibacterial effect were tested against gram positive bacteria such as Bacillus subtilis and gram negative bacteria such as Echerichi coli, Pseudomonas aeruginosa using cup plate method and agar diffusion method. Anthelmintic effect would be expected to minimalize the infection of parasitic worm Pheritima posthuma. The Antidiarrhoeal potential of the ethanolic extract of mimosa pudica has been evaluated in Swiss Albino Mice by two different approaches that include castor oil induced diarrhoea and loperamide induced constipation in mice. The detailed research study revealed Mimosa pudica aerial parts possess significant antibacterial, anthelmintic and antidiarrhoeal potential and the research study could drop establish information for the possibility to develop medicinal preparation for the treatment of all these mentioned ailments.

Keywords: Mimosa pudica, Antibacterial, Anthelmintic, Antidiarrhoeal.

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM 533 437

CASE REPORT ON DRUG INDUCED ORTHOSTATIC HYPOTENSION AND VERTIGO IN HYPERTENSIVE AND BENINGN PROSTATIC HYPERPLASIA PATIENT

AMIT KUMAR

Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India.

Abstract: Orthostatic Hypotension (OH) is a clinical condition characterized by a drop in blood pressure upon standing, leading to symptoms such as dizziness and lightheadedness. Benign prostatic hyperplasia (BPH) is a condition that affects many men and can cause lower urinary tract symptoms (LUTS). Some of the drugs used to treat BPH, such as alpha-blockers, can also cause OH. Here is a case of a patient who experienced drug-induced orthostatic hypotension along with Vertigo. The management of drug-induced OH and vertigo included dose adjustment, drug discontinuation or switching, hydration, salt intake, compression stockings, physical countermeasures, and pharmacological interventions. In conclusion, drug-induced OH and vertigo are important adverse effects that should be considered in BPH patients who are treated with alpha-blockers or antimuscarinics. Clinicians should be aware of the risk factors, diagnosis methods, and management strategies for these conditions. Further research is needed to compare the safety and efficacy of different drug classes and combinations for BPH patients with LUTS.

Keywords: Orthostatic Hypotension, Drug-induced, Adverse effects, Vertigo, Dizziness.

INTERNET OF THINGS IN PHARMACEUTICAL INDUSTRY

K. SAI LAVANYA, V.PAVANI, P.UPENDRA

Avanthi Institute of Pharmaceutical Sciences, Andhra Pradesh, India.

Abstract: IoT is a global network of connected people and devices. It is enabled by decreasing technology costs, sensors, connectivity, APIs and more. The IoT has made significant inroads into the pharmaceutical industry, revolutionising various aspects of drug development, manufacturing, and distribution. One of the primary applications of IoT in pharmaceuticals is in research and development(R&D). IoT enabled sensors and devices collect real time data during the drug development, allowing scientists to monitor experiments remotely and make data-driven decisions. This not only accelerates the drug development process but also enhances its precision. Applications of IoT in pharmaceutical industry are: inventory management, quality control, remote monitoring of clinical trials, patient medication adherence, environmental monitoring etc. In conclusion, IoT has ushered in a new era of innovation and efficiency in pharmaceutical industry. From drug development and manufacturing to supply chain management and patient care, IoT applications are transforming the sector. As technology continues to advance, the industry can expect even more profound changes in the years to come.

Keywords: Internet of Things (IoT), Drug development, Sensors.

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM 533 437

FACTORS AFFECTING THE QUALITY OF LIFE OF PATIENTS WITH PULMONARY ARTERIAL HYPERTENSION IN A TERTIARY CARE HOSPITAL

ANJU K ABRAHAM

Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India.

Abstract: Despite advancement in medicine, PAH is a chronic condition that has high rate of morbidity and mortality. The main objective of this study is to evaluate the connection between outcomes and HRQoL in PAH patients. Data on demographics, clinical conditions, physiology and hemodynamics were gathered from the patient. The MMRC dyspnea scale, MMAC scale and Kuppuswamy scale are a few self rating scales that are used as proven evaluation instruments to evaluate various factors. Out of 70 patients a total of 26 patients i.e (37.14%) had low quality of life which lead them to progressive stages of PAH. About 42 (60%) patients had low socioeconomic status which lead to worsening of disease. Patient with low score of medication adherence (34.28%) were more likely to have severe PAH disease. The patients perception of an improvement in HRQoL should be a fundamental sign of high quality care making it a crucial tool in assessing the success of medical interventions.

Keywords: Pulmonary Arterial Hypertension, Morisky Medication Adherence Scale.

PHARMACOGENOMICS

JIGEESHA LAKSHMI GANJA

Koringa College of Pharmacy, Korangi, Andhra Pradesh, India.

Abstract: Pharmacogenomics is a field of study that blends pharmacology and genomics to improve the ways in which medication is prescribed to patients.The adoption of AI & development in genomics is making hospitals smarter by advancing personalized health care. The use of trail & error method in prescribing medication is both inconvenient & potentially dangerous for patients. It is possible to predict which individuals can benefit from treatment and which ones may suffer from toxicity. By using unique genetic information, doctor's can prescribe medications with greater accuracy. Drug-gene interactions describes how a patient's genetic makeup can affect the outcomes of medication therapy. The new arena of personalized medicine is possible due to innovations in genomics by providing speciality care for several unmet clinical needs like chronic conditions.

Keywords: Medication Therapy, Genetic, Interactions, Genomics, Pharmacology.

CASE STUDY ON AUTOIMMUNE ENCEPHALITIS WITH SEIZURES

VENKATA PRATHIGNA KUDIPUDI, P.V.M. SINDHU, K. VERONICA

Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India.

Abstract: Autoimmune encephalitis is a rare and complex neurological disorder characterized by the immune system's misguided attack on healthy brain tissue, leading to inflammation and a spectrum of diverse clinical presentations. A 29 year old female was admitted to the hospital presenting with pronounced hyperthermia. Subsequent medical evaluation by the physician revealed a diminished platelet count. After a span of a few hours,the patient manifested acute seizures of severe intensity. Upon diagnosis MRI brain scan a slight thickening of the ethmoidal mucosa was observed bilaterally. Due to severe seizures the patient was transferred to a nearby secondary care hospital. As a result of these seizures, the patient entered an unconscious state and fell into a coma on PET-CT imaging, which indicated finding consistent with a possible autoimmune encephalitis, potentially involving the limbic system. After undergoing a 45 day course of maintenance therapy, the patient regained consciousness. However, she exhibited significant retrograde amnesia, resulting in the inability to recollect various aspects of her personal history.

Keywords: Autoimmune Encephalitis, Diminished platelet count, Severe acute seizures.

ADITYA COLLEGE OF PHARMACY SURAMPALEM

PRINCIPAL
Aditya College of Pharmacy
SURAMPALEM 533 437