



***METHODS OF PHARMACOLOGICAL
SCREENING***

OMEGA COLLEGE OF PHARMACY

National Conference on Methods Pharmacological Screening

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FORMULATION AND EVALUATION OF CAPTOPRIL FLOATING MICROSPHERES.

Dr. A.V. Jitthan, Principal/Professor, Omega College of Pharmacy

Abstract:

To create and test captopril floating microspheres with polymers such as HPMC K100M, HPMC K4M, and ethyl cellulose. Captopril has a limited half-life of 2 hours, necessitating frequent dosing. Additionally, it degrades in the intestinal PH. To address this issue, a controlled release formulation (CRF) can be developed for the gastro-retentive system. Solvent evaporation was used to create floating captopril microspheres. In this investigation, nine formulations were created utilizing HPMC K100M, HPMC K4M, and ethyl cellulose in different amounts. The Captopril sustained-release floating microspheres were analyzed for micrometric properties such as FT-IR, SEM particle size and distribution, percentage yield drug content, entrapment efficiency, drug loading, invitro dissolution studies, and buoyancy release kinetics. The FT-IR spectra indicated no interaction between polymers and captopril. SEM confirmed that the floating microspheres containing captopril were spherical. Invitro performance is affected by polymer concentration. The sustained-release floating microsphere enhanced captopril release in vitro compared to previous formulations.

This study examines the prevalence of anemia among pregnant women attending an antenatal clinic at the Rural Health Training Center (RHTC) on CTM Cross Road

Dr.S. Venkata Ramana Reddy, Associate Professor, Omega College Of Pharmacy

Abstract:

Introduction: Anemia is a condition caused by multiple diseases rather than a single disease. It refers to a decrease in the amount of hemoglobin in the blood compared to normal levels. The World Health Organization defines anemia in adults as having hemoglobin levels less than 13g/dl for men and 12g/dl for women. Some individuals appear to have normal levels below this threshold. Low hemoglobin levels reduce the blood's ability to deliver oxygen. The study aims to investigate the prevalence of anemia among pregnant women attending an antenatal clinic at the Rural Health Training Center (RHTC) in Madanapalle, Annamayya district.

METHODOLOGY: A community-based cross-sectional study was conducted in the Antenatal Clinic at Rural Health Training Centre in Madanapalle, Annamayya District. Our investigation lasted four months, from March to June 2022, and was authorized by the Institutional Ethics Committee[IEC].

RESULTS: Of the 269 pregnant women participating in this research Pregnant women typically range in age from 22 to 24.

ANEMIC STATUS: Out of 269 pregnant women. In our investigation. Most pregnant women had moderate anemia. In our study, most pregnant women had a normal BMI.

EDUCATIONAL STATUS: Most pregnant women in our study had a secondary education level, which corresponds to part 1c1 trousers.

OCCUPATION: In our survey, the majority of pregnant women are homemakers. In our study, the majority of pregnant women had G2 gravida status.

TYPE OF FAMILY: This study included 25 (464601:) (53.33%) joint families. In our study, the

majority of pregnant women came from joint families. In our study, 6 (2.23%) are vegetarians, while 263 (97.760%) are mixed. In our study, the majority of pregnant women identified as mixed. Pregnancies in this study typically last between 13-24 weeks.

BIRTH INTERVALS: Most pregnant women in this study had birth intervals between 1-3 years.

In our study, the age at marriage was equal to 18 years. The majority of pregnant women were married and aged between 19 and 24 years. In this study, most pregnant women took iron supplements. In our study, the majority of pregnant women had knowledge of iron supplementation.

DISCUSSION: According to WHO data, 35-75% of pregnant women in developing nations have anemia, with India having the highest prevalence. In this study, a prevalence rate of 73.3 percent was recorded. R.G. Viveki (74.1%) and Agarwal (73.7%) had higher prevalence rates than Gowthamet.al (96.8%) (137), but PrashantD et al. found a lower prevalence rate in Nepal (42.5%). The study found that pregnant women have a high prevalence rate of anemia (73.3%), highlighting anemia as a significant health issue in rural communities.

EFFECT OF POLYPHARMACY ON ADRS AMONG GERIATRICS

Dr. V Rama Ramesh, Professor, *Omega College of Pharmacy*

Abstract:

This study aims to improve the evaluation of pharmacological benefit and harm profiles, which is crucial for evaluating ADRs in early warning systems for regulatory purposes. Polypharmacy is commonly defined as taking five or more drugs concurrently. The aim is to identify adverse drug reactions (ADRs) in polypharmacy among geriatric patients. We analyzed the drug-event link and monitored and assessed ADRs in geriatrics. Methodology: The term "adverse drug reaction" means "an appreciably harmful or unpleasant reaction, resulting from an intervention related to the use of a medicinal product, which predicts hazard from future administration and warrants prevention nor specific treatment, or alteration of the dosage regimen, or withdrawal of the product ."Some adverse drug reactions (ADRs) are unpredictable, such as anaphylaxis after a previous exposure to a penicillin-containing antibiotic. However, most ADRs may be avoided with proper planning and monitoring. Epidemiological studies indicate that approximately one-third to one-half of ADRs are potentially preventable. However, determining preventability is easier in retrospect. The study included 120 geriatric individuals with polypharmacy, with 70 (58.33%) and 50 (42%) being females. The study included more male participants than females. The study included 90 (75%) patients with hypertension, 85 (70.83%) with diabetes Mellitus, 60 (50%) with chronic renal disease, and 65 (54.16%) with anemia.

VARIOUS RICE PRODUCTS HAVE ANTI-DIABETIC AND ANTI-HYPERLIPIDEMIC ACTIVITY

Dr. Kappala Ramesh, Professor, Omega College of Pharmacy

Abstract:

Oryza sativa, a member of the Gramineae family and subfamily Oryzoides, is the world's second most significant cereal crop and a staple food for almost 50% of the global population. Rice is a grain from the grass family. It is linked to other grass plants like wheat, oats, and barley, which produce grain for food and are also called cereals. This study evaluates the pharmacological effects of rice products on diabetes and hyperlipidemia. It identifies phytochemical constituents of rice varieties and extracts active constituents using solvents like ethanol, methanol, and hexaneal. Brown rice with a glycemic index of 55 (normal) is beneficial for diabetes management due to its high carbohydrate, fiber, antioxidant, vitamin, and mineral content. It also contains flavonoids, which are powerful antioxidants. Consuming these foods has been linked to a lower risk of chronic illness, cardiovascular disease, kidney damage, cancer, and Alzheimer's disease. They promote satiety and weight reduction.

ANTIHYPERLIPIDAMIC EFFECTS OF CROTALARIA JUNCEA LEAF EXTRACTS (METHANOLIC AND ETHANOLIC)

Dr. J. Vidya Sagar, Professor, Omega College of Pharmacy

Abstract:

The objective of this study was to investigate the antihypercholesterolemic effects of an ethanolic extract of *Crotalaria juncea* Linn (whole plant) at 50 mg/kg BW and 100 mg/kg BW per day using in vivo investigations.

Methods: An ethanolic extract of *Crotalaria juncea* Linn (whole plant) was administered orally to rats fed a high-fat diet at doses of 50 mg/kg BW and 100 mg/kg BW per day. Evaluations included food consumption, weight gain, fecal fat excretion, serum and liver lipids, biochemical profiles, and histopathological studies. The study compared the results of animals fed a conventional diet to those fed a high-fat diet with atorvastatin (10 mg/kg BW). The ethanolic extract supplied to the animal group for 35 days significantly decreased levels of TC, LDL, VLDL, TG, HDL+VLDL, VLDL+LDL, LDL/TC, AI, SGOT, SGPT, and increased levels of HDL and HDL/TC in a dose-dependent manner ($p < 0.01$ and $p < 0.05$, respectively). Animals treated with the herbal extract had higher levels of SOD, GSH, and catalase in their liver tissues, but lower levels of SGOT, SGPT, total glucose, HMG-CoA, lipase, amylase, and malondialdehyde compared to rats fed a high fat diet. The study found that an ethanolic extract of *Crotalaria juncea* L. has a positive impact on blood lipids and metabolic parameters in rats, indicating its potential as an antihypercholesterolemic agent. The treated groups had significantly lower body weight and food intake than the model control group.

**A STUDY WAS CONDUCTED TO INVESTIGATE THE
PHYSICOCHEMICAL AND ANTIMICROBIAL PROPERTIES OF
WRIGHTIA TINCTORIA AEGLE MARMELAS**

Dr. Hanwathe Parameshwar, Professor, Omega College Of Pharmacy

Abstract

Wright iriatinctoria is a perennial ornamental woody plant from the Apocynaceae family that can be found throughout India. The plant's stem bark, leaves, flowers, and seeds offer medicinal characteristics such as anti-inflammatory, antiviral, antibacterial, wound healing, anticancer, and anti-ulcer. This paper aims to give a comprehensive botanical description, classification, pytochemical, and pharmacological analysis of the plant. Aeglemarmelos Correa (Rutaceae), sometimes known as 'Bael', is a traditional medicine used to cure a variety of diseases. Despite extensive research on the plant, there is still a dearth of evidence to determine which type has the highest therapeutic potential. This study examines the phytochemical properties of aqueous and methanolic leaf extracts from 18 varieties/accessions of A.marmelos. A.marmelos crude extracts include biologically active phytochemicals, with the Pant Aparna species having the highest concentration of alkaloids, flavonoids, and phenols. The aqueous extract had the maximum inhibitory action against *S. epidermidis*, whereas the methanolic extract was most effective against *S. aureus* at a dosage of 40 mg/mL. However, in aqueous ethanol, the highest effects were found against *E.aerogenes*. Next came *K. pneumoniae* and *S. epidermidis*. The MIC for aqueous and ethanol extracts of *Aegle marmelo* ranged from 10mg/mL to 40mg/mL, whereas ethanolic extracts ranged from 40 mg/mL to 160 mg/mL. The GC-MS analysis identified a variety of bioactive chemicals, including flavonoids, alcohols, aldehydes, aromatic compounds, fatty acid methyl esters, terpenoids, phenolics, and steroids, which may have antibacterial action.

USING AND EVALUATING ANTIHYPERTENSIVE DRUGS FOR HYPERTENSIVE PATIENTS IN TERTIARY CARE TEACHING HOSPITALS

Dr. Naga Mallika, Associate Professor, Omega College Of Pharmacy

Abstract:

Hypertension is a significant health issue that contributes to the onset and progression of cardiovascular illnesses. Early detection and treatment of high blood pressure can significantly lower the burden of disease and address concerns about its complications. This cross-sectional observational study examines how antihypertensives are used to treat hypertension at a tertiary care hospital, taking into account conventional treatment guidelines.

Materials and methods: The medicine outpatient department of a tertiary care teaching hospital reviewed prescriptions for antihypertensive medications. After reviewing patients' medical data, 286 prescriptions for hypertension were identified.

Data analysis focused on demographics and comorbidities.

Calcium channel blockers accounted for the majority of antihypertensive medication usage (72.3%). Amlodipine (55.6%) was the most commonly prescribed antihypertensive medication. The use of thiazide diuretics was 9%. Adherence to the National List of Essential Medicines (NLEM) was 65%. Combination therapy was more commonly utilized (51.5%) than monotherapy (48.8). ACE-I/ARBs were used by 41.4% of diabetics.

Conclusions: The therapy pattern followed normal treatment standards. Several issues need to be addressed, including underutilization of thiazide diuretics, increased medication understanding among NLEMs, and improved use of ACE-I/ARB in diabetic hypertensives.

**Evaluation, Phytochemical Screening, and Antibacterial Activity of Ficus
Dalhousieiae MIQ**

Dr. J Ramesh, Associate Professor, Omega College of Pharmacy

Abstract:

This study aims to isolate and assess the antibacterial and antifungal activities of extracts from Ficus dalhousiae Miq leaves. The plant extracts in n-hexane, chloroform, ethyl acetate, and methanol were produced using continuous soxhlation using the soxhlet equipment. Plant extracts were tested for antibacterial activity against three bacterial species: Staphylococcus aureus, Bacillus subtilis, and Escherichia coli, utilizing a cup plate method and agar diffusion method. These are compared with the typical reference medication, Ciprofloxacin. The study found that bark extracts contain more active components than leaf extracts. A pharmacological assessment of Ficus dalhousiae Miq. Various extracts exhibit mild antibacterial activity.

Evaluating the pharmacological activity of Chadraprabha VATI on the serum of albino wistar strain rats

A. Ashish Reddy, Assistant Professor, Omega College Of Pharmacy

Abstract:

The study aims to assess the acute and sub-acute toxicity of Ayurvedic Bhasma and identify potential negative effects from heavy metals. Chandra prabhavati pills were weighed, powdered, and suspended in water before being turned into a liquid formulation. Animals were treated with Chandra prabhavati at doses of 50 and 500 mg/kg in rats. The dose was calculated by extrapolating the equivalent human dose (1 and ten times). It was delivered orally between ten and eleven after midnight daily for twenty-eight days, with a volume of little more than one ml/100 g rat weight. Blood samples were obtained every seven, fourteen, and twenty-eight days and killed for histopathology examinations.

**NEW ANALYTICAL METHODS FOR ESTIMATING RUFINAMIDE IN
BULK AND PHARMACEUTICAL DOSAGE FORMS HAVE BEEN
DEVELOPED AND VALIDATED**

A. Janardhan, Assistant Professor, Omega College of Pharmacy

Abstract:

Developing ways to ensure the quantity of pharmacological substances and products is a significant endeavor. The three methods had complementing skills. These methods are straightforward, specific, and sensitive for estimating Rufinamide in both bulk and medicinal dosage forms. There are few analytical methods for determining Rufinamide in the literature, such as HPLC, UV-Vis Spectrophotometric, and LC-MS/MS. To address this issue, simple analytical methods with high sensitivity, accuracy, precision, and cost-effectiveness were developed. This study created a simple, sensitive, precise, and accurate RP-HPLC method to quantify Rufinamide in both bulk and medicinal dosage forms. The results are shown in Table 5.11-5.28. The RP-HPLC method was more sensitive, accurate, and precise than the Spectrophotometric approaches. This approach is suitable for regular determination of Rufinamide in bulk drugs and pharmaceutical dosage forms.

In vitro antioxidant activity of *Kedrostis foetidissima* (JACQ) COGN

A. Nikhilesh, Assistant Professor, Omega College of Pharmacy

Abstract:

This study evaluates the antioxidant activity of *Kedrostis foetidissima* on a systemic level. The ethanolic extract of *Kedrostis foetidissima* was tested for free radical, hydroxyl radical, superoxide, and nitric oxide scavenging properties. The antioxidant activity of ethanolic extract was compared to conventional antioxidants including ascorbic acid, copper sulphate, and 6-di-ter-butyl-p-hydroxytoluene (BHT). The ethanolic extract demonstrated antioxidant activity using in-vitro screening methods. The study found that ethanolic extract had moderate efficacy against conventional medicines.

**Pharmacological studies on the anti-diarrheal activity of *Malachra capitata*
(L.) in experimental animals**

A. Madhava Reddy, Assistant Professor, Omega College of Pharmacy

Abstract:

This study evaluated the anti-diarrheal effects of an aqueous extract of *Malachra capitata* Linn (AMC) on a castor oil-induced diarrhea model in rats. This study tested the antidiarrheal effect of an aqueous extract of *Malachra capitata* on rats utilizing castor oil-induced diarrhea, enteropooling, and small intestinal transit models. The enteropooling method was used to study the effects of castor oil on the weight and volume of intestinal content. Diphenoxylate (5 ml/kg, p.o.) significantly reduced fecal output and frequency of droppings, while AMC at dosages of 200 and 400 mg/kg p.o. significantly reduced fecal output, frequency, consistency of diarrhea, and enteric pooling. The gastrointestinal transit rate was calculated by dividing the charcoal's longest distance by the small intestine's total length. AMC at doses of 200 and 400 mg/kg significantly reduced ($P < 0.001$) castor oil-induced charcoal meal transit. The AMC significantly decreased diarrhea stools, weight, and volume of intestinal contents, while also reducing intestinal transit. The results confirm the efficacy of the folklore claim as an anti-diarrhea agent. More research is needed to fully understand the mechanism of *Malachra capitata*'s anti-diarrheal activity.

Using a simultaneous equation method to determine azithromycin and cefixime trihydrate in a tablet formula

Aksha Kumari Nagunoori, Assistant Professor, Omega College of Pharmacy

Abstract:

A simple and precise UV-spectrophotometric method has been developed to measure azithromycin (AZI) and cefixime trihydrate (CEFI) in tablet formulations. The approach involved analyzing both drugs simultaneously using equations. In methanol, AZI and CEFI exhibit absorbance maxima at 222 and 289 nm, respectively. Both drugs demonstrated linearity in the concentration range of 10-50 g/ml, with a strong correlation ($r^2 = 0.999$). AZI and CEFI had quantification limits of 2.40 and 4.60 g/ml, and detection limits of 0.81 and 1.52 g/ml, respectively. Validation confirmed the recommended method's viability for quantitative drug determination. The technique effectively tested a pill composition.

A REVIEW OF THE IMPORTANCE OF RP-HPLC IN ANALYTICAL METHOD DEVELOPMENT

Akula Ramesh, Associate Professor, Omega College of Pharmacy

Abstract:

High-performance liquid chromatography (HPLC) is a versatile technology that separates analytes by passing them through a column packed with micrometer-sized particles, particularly used in chemical analysis. Today, reversed-phase chromatography is the most widely utilized separation technique in HPLC. The reversed-phase method's versatility and ability to handle compounds with varying polarities and molecular masses contribute to its popularity. Reversed phase chromatography has analytical and preparative uses for biological separation and purification. Reversed phase chromatography is highly effective at separating hydrophobic molecules like proteins, peptides, and nucleic acids. This review discusses the significance of RP-HPLC in analytical technique development, including methodologies and essential chromatographic parameters to optimize for efficiency.

A new spectrophotometer method can estimate PARACETAMOL and FLUPIRTINE MALEATE in both pure and pharmaceutical dosage forms simultaneously

Ananthula Santhosh Reddy, Assistant Professor, Omega College of Pharmacy

Abstract:

The Vierordt's approach, also known as the simultaneous equation method, was developed and verified for estimating paracetamol and flupirtine maleate in pure and pharmaceutical dosage forms. The procedure involved measuring the absorbance of paracetamol and flupirtine maleate at 245 nm and 344.5 nm in 0.1 N HCl. The calibration curves for paracetamol and flupirtine maleate were linear at concentrations of 5-15 $\mu\text{g/mL}$ and 1.53-4.61 $\mu\text{g/mL}$, respectively, with R^2 values of 0.999. The limit of detection (LOD) and limit of quantification (LOQ) for paracetamol were 185.90 ng/mL and 563.38 ng/mL, whereas flupirtine maleate was 78.89 ng/mL and 239.06 ng/mL, respectively. The precision study revealed that the percentage RSD value was within acceptable limits (%). The anticipated approach is accurate, as the percentage recovery ranged from 99.18 to 100.02% for paracetamol and 98.47 to 100.09% for flupirtine maleate. The study indicated that the method for estimating paracetamol and flupirtine maleate in pure and tablet dose forms is simple, accurate, precise, and cost-effective. The proposed approach accurately estimates paracetamol and flupirtine maleate in both pure and prescription dosages.

Antimicrobial activity and physicochemical analysis of organic extracts from *Cleome Spinosa Jacq*

Ashok Baelde, Associate Professor, Omega College Of Pharmacy

Abstract:

This study examined the antibacterial properties and phytochemical composition of extracts from *Cleome spinosa Jacq.* (Cleomaceae) roots and leaves, as they are commonly used in traditional medicine to treat inflammation and infection. *C. spinosa* leaves (L) and roots (R) were extracted using several solvents (cyclohexane (ChL and ChR), chloroform (CL and CR), ethyl acetate (EAL and EAR), and methanol (ML and MR)). Antimicrobial activity was assessed using the broth microdilution method to determine the minimum inhibitory (MIC) and microbicidal (MMC) values for 17 species, including bacteria and yeasts. Oxacillin's antibacterial and combinatory activities were evaluated against eight clinical isolates of *Staphylococcus aureus*. *C. spinosa* extracts shown wide antibacterial activity, inhibiting all tested bacteria and yeasts. *C. spinosa* extracts contain phytochemicals such as flavonoids, terpenoids, and saponins, which may contribute to its action. The most effective extracts were ChL and CL, with MICs below 1 mg/mL against *S. aureus*, *Bacillus subtilis*, and *Micrococcus luteus*. These quantities are significantly lower than the 50% hemolysis concentration (HC50) values. The average MIC against *S. aureus* was strongly correlated with its phenolic ($r = -0.89$) and flavonoid content ($r = -0.87$) content, suggesting that these metabolite groups may play a role in the antibacterial action of *C. spinosa* extracts. CL and CR inhibited *S. aureus* clinical isolates most effectively and synergistically with oxacillin against all strains (at least in one percentage). These findings highlight the importance of identifying active compounds as potential lead molecules for developing novel antimicrobial medicines.

RED BLOOD CELLS

Bathula Venkatesham, Assistant Professor, Omega College of Pharmacy

Abstract:

Human red blood cells (RBC) are highly differentiated, having lost all organelles and intracellular machinery during maturation. RBCs play a crucial role in the respiratory system, transporting oxygen to cells and tissues and delivering CO₂ to the lungs. RBC's flexible nature allows them to move through all blood channels, including microscopic capillaries. Human red blood cells (RBC) move through the bloodstream for an average of 120 days and interact with many cell types. RBCs can interact and communicate with ECs, platelets, macrophages, and microbes. They serve a crucial role in maintaining thrombosis and hemostasis, as well as immunological response to pathogens. We studied RBC membrane components, including ion channels, proteins, and phospholipids, to better understand their interactions with other cells in health and sickness, and to identify crucial participants. This article provides an overview of RBC interactions with other cells, including ECs and platelets, under both healthy and diseased settings. Research has explored both direct and indirect interactions between RBCs and other cells, including ECs, platelets, WBC, macrophages, and other RBC. Plasma ligands, proteins, and released chemicals can cause indirect interactions between cells. This review also discusses mechanical interactions, which involve the dynamic and rheological distribution of red blood cells in healthy flow circumstances. This highlights the intricate global interactions of adult RBCs and emphasizes the importance of considering pathological situations.

Medicinal Herbs to Treat Hypertension

C.A. Sri Ranjani, Assistant Professor, Omega College of Pharmacy

Abstract:

Hypertension is a frequent condition for many people today. Despite billions of dollars spent annually on treating and detecting cardiovascular illness, conventional medications have not significantly reduced the number of patients with hypertension. Alternative medicine can effectively reduce the rising number of persons with high blood pressure. Alternative therapies, such as diet, exercise, stress management, supplements, and herbs, have been shown to effectively reduce high blood pressure according to research. Herbal therapies for high blood pressure are receiving increasing attention in research. Herbal medications such as Punarnava, Barberry, Rouwolfia, Garlic, Ginger, Ginseng, and Arjuna can effectively cure hypertension. Hypertension (HTN) is the medical term for high blood pressure. It's harmful because it strains the heart and causes atherosclerosis, increasing the risk of heart disease and stroke. HTN can potentially cause congestive heart failure, renal damage, and blindness. Conventional antihypertensive medications are often associated with several adverse effects. Herbal medications are commonly used for basic health care by 75-80% of the world's population, particularly in underdeveloped nations, due to their lower side effects and higher acceptability with the human body. Over the past 30 years, extensive research has focused on native plants having hypotensive and antihypertensive properties. Some medicinal plants have been validated for their hypotensive and antihypertensive properties, whereas others have been disproven. More scientific research is needed to validate the usefulness and safety of herbal treatments for antihypertensive purposes, combining ayurveda knowledge with modern medicine.

Formulation and Evaluation of Solid Dispersion

Ch. Sai Tharun, Assistant Professor, Omega College of Pharmacy

Abstract:

Aceclofenac (2-[(2, 6-dichlorophenyl) amine] phenylacetoxyacetic acid) is an oral NSAID with anti-inflammatory, analgesic, and antipyretic effects [1], [2]. Aceclofenac is well-tolerated among NSAIDs, with decreased rates of gastrointestinal side effects [3]. Aceclofenac's low water solubility (0.058 $\mu\text{g/ml}$) results in poor dissolution and low oral bioavailability. The biopharmaceutical classification system (BCS) classifies drugs into four classes based on solubility and permeability [4]. Aceclofenac is a BSC class II chemical whose oral bioavailability is governed by its dissolution rate in the gastrointestinal tract [5, 6]. Improving aceclofenac solubility is crucial for increased bioavailability and therapeutic efficacy. This study aimed to improve the dissolution rate of aceclofenac (BCS-class II), a poorly water-soluble medication, by employing Avicel 200 and Sylysia 350 polymers. Surface solid dispersion (SSD) was created by kneading varying ratios of aceclofenac and polymers. A phase solubility research was done to assess the impact of polymers on the aqueous solubility of aceclofenac. Solid state characterisation was examined using SEM, FTIR, DSC, and XRD. An *in vitro* dissolving investigation was conducted in phosphate buffer at pH 6.8. A solid-state investigation revealed a partial interaction between aceclofenac and polymers. Aceclofenac from solid dispersion (SD) had a considerably higher *in vitro* dissolution rate than pure aceclofenac. The nature and amount of polymer utilized altered the drug's dissolving rate. Aceclofenac/Avicel 200 solid dispersion (1:5) had a higher dissolving rate compared to aceclofenac/Sylysia 350 (1:3). The solid dispersion approach effectively improves the dissolving profile of aceclofenac.

WHO guidelines for monitoring the safety of herbal medicines in the pharmacy system

Ch. Suman, Assistant Professor, Omega College of Pharmacy

Abstract:

The WHO encourages drug regulatory bodies and national pharmacovigilance centers to actively contribute to the development of these guidelines. Improved communication among authorities is crucial for achieving the common objective of ensuring herbal medication safety. To include herbal medicines, existing national pharmacovigilance systems should be expanded or full national pharmacovigilance systems should be established where none exist. The guidelines recognize obstacles in monitoring the safety of herbal medications and provide solutions to overcome them. The method for reporting and analyzing adverse reactions to herbal medicines receives special emphasis. The majority of reported adverse occurrences with herbal products and pharmaceuticals are due to poor product quality or incorrect use. Inadequate regulatory measures, weak quality control systems, and uncontrolled distribution methods (e.g. mail order and Internet sales) may have contributed to these instances. To prevent wasting valuable resources on discovering and studying adverse reactions to herbal medicines, it is important to decrease or eliminate occurrences that emerge from these scenarios. The World Health Organization (WHO) encourages member states to improve national regulation, registration, quality assurance, and control for herbal medicines. National health authorities should prioritize consumer education and qualified practice when providing herbal medications.

DETERMINATION OF CASEIN PRESENT IN DIFFERENT MILK SAMPLES

Danavath Giribabu, Assistant Professor, Omega College of Pharmacy

Abstract:

Casein (from Latin caseus, meaning "cheese") is a family of related phosphor proteins (α S1, α S2, β , κ). These proteins are typically found in mammalian milk, accounting for around 80% of cow's milk and 20%-45% of human milk. Casein is a versatile ingredient that can be used as a culinary additive or a main component of cheese. The most prevalent kind of casein is sodium caseinate. Casein is a food source that provides amino acids, carbohydrates, and vital elements including calcium and phosphorus. Casein contains a large amount of proline residues that don't interact. There are no disulfide bridges. As a result, it contains comparatively little tertiary structure. It has low water solubility due to its hydrophobic properties. Casein micelles, found in milk as a suspension of particles, differ from surfactant-type micelles in that the hydrophilic sections are spherical and located on the surface. Casein micelles differ from surfactant micelles by having a highly hydrated interior. Calcium ions and hydrophobic interactions hold the caseins in micelles together. Several molecular hypotheses could explain the unique casein structure in micelles. According to one theory, the micellar nucleus is made up of several submicelles, with κ -casein micro vellosities forming the periphery. Another concept proposes that the nucleus is made up of interwoven casein fibrils. The most recent model offers a twofold link between caseins to facilitate gelling. Micelles are colloidal particles made up of casein aggregates and soluble κ -casein molecules, according to all three hypotheses. The isoelectric point of casein is 4.6. Milk's pH of 6.6 results in a negative charge for casein. The refined protein is water insoluble. Although it is insoluble in neutral salt solutions, it dissolves easily in dilute alkalis and salt solutions like aqueous sodiumoxalate and sodium acetate. Trypsin is an enzyme that breaks down phosphate-containing peptones.

REVIEW OF HYPERTENSION

Dharani Priyanka B, Assistant Professor, Omega College of Pharmacy

Abstract:

The study aimed to analyze epidemiological and case-control studies to evaluate if arterial hypertension is linked to a higher incidence of vascular dementia (VaD). A systematic review was conducted on longitudinal and cross-sectional prospective studies that used operationalized criteria to characterize VaD and hypertension, with a normal control group as comparison. We searched Cochrane Library, Embase, Medline, and PsycInfo databases, as well as the reference lists of included articles and reviews. Original research with operationalized criteria for hypertension and VAD, as well as the number of cases with and without hypertension in the VAD and non-demented groups, were considered. Intervention, post-stroke, and CADASIL studies were eliminated. A total of 768 people with VaD and 9857 control cases were studied in 11 investigations involving volunteers, clinical patients, and population-based research. Hypertension, coronary heart disease (CHD), and anxiety disorders lead to significant morbidity and healthcare costs. For decades, researchers have theorized and examined associations between these disorders. Psychosocial stresses linked to anxiety disorders increase autonomic arousal via the hypothalamic-pituitary axis, leading to a rise in circulating catecholamine levels. High arousal levels can lead to hypertension, inflammation, and coronary heart disease. This connection is consistent across anxiety disorders (e.g., generalized anxiety, posttraumatic stress disorder, panic disorder, and obsessive compulsive disorder), even when controlling for comorbidities including depression and physical diseases. Several cross-sectional studies indicate a favorable correlation between anxiety and hypertension. Individuals with hypertension are more likely to experience anxiety, and vice versa. However, a few investigations have shown no link. Longitudinal studies suggest that anxiety sufferers are more likely to acquire hypertension. Research indicates a relationship between anxiety symptoms, diseases such as panic disorder and PTSD, and cardiovascular health consequences. Drawing broad conclusions from these studies is problematic due to the variety of measures used to measure anxiety disorders. Anxiety, hypertension, and CHD are common disorders observed in primary care. Anxiety may be a significant predictor of CHD outcomes.

A Review of Artificial Intelligence

Sravanthi CH, Assistant Professor, Omega College of Pharmacy

Abstract:

Artificial intelligence (AI) is transforming and strengthening healthcare by predicting, grasping, learning, and acting, from identifying genetic code correlations to controlling surgical robots. It can detect subtle patterns that humans would overlook. This study focuses on recent AI applications in the healthcare sector. The study focuses on three emerging areas of AI in healthcare: drug development, clinical trials, and patient care. AI has helped pharmaceutical companies accelerate medication research and automate target selection, according to the findings. AI can automate data monitoring, saving time. The study found that AI-assisted clinical trials can handle large amounts of data and produce accurate results. Medical AI businesses provide solutions to aid patients at all levels. Clinical intelligence analyzes patients' medical data and delivers insights to improve their quality of life. The healthcare industry is undergoing significant transformation. The transformation in healthcare is driven by rising costs and a shortage of expertise. The healthcare business is implementing innovative IT-based solutions to reduce costs and address growing challenges.

Development and Validation of Analytical

Dravin Kaaniganti, Assistant Professor, Omega College of Pharmacy

Abstract:

The goal of this research is to provide a cost-effective, accurate, reproducible, and sensitive technique for estimating velpatasvir drug product using the rp-hplc method. **Methods:** A new liquid chromatographic method was developed to estimate the medicinal product Velpatasvir. Chromatographic separation was obtained using a C18 column (Luna 18 150*4.6mm3.0um) at ambient temperature. The separation was performed using a mobile phase of 0.1% Formic acid in water, methanol, and acetonitrile (35:40:25). The flow rate was 0.8ml/min and the UV detector was at 269nm. Velpatasvir had an average retention time of 2.62 minutes. **Results:** The approach was validated in accordance with ICH recommendations. All validation parameters fell within the permitted range. Velpatasvir testing techniques showed linearity from 20-60µg/ml concentration. Velpatasvir had a correlation value of 0.9998. The developed approach achieved a mean recovery rate of 98.4-100.4% for velpatasvir. The developed approach was also discovered to be resilient.

Conclusion: The devised method is effective for routine quantitative analysis of Velpatasvir in bulk and pharmaceutical dosage forms. The devised approach demonstrated accuracy, precision, linearity, reproducibility, robustness, and sensitivity.

REVIEW OF SWINE FLU

Dunthoju Sravani, Assistant Professor, Omega College of Pharmacy

Abstract:

Swine flu, often known as Hog or Pig Flu, is a contamination caused by many types of Swine Influenza Virus (SIV). It is frequent among pig populations globally. Previously, only those in direct touch with pigs were proven to be susceptible to swine influenza. The H1N1 virus is a novel swine flu virus that contains genetic material from swine, hen, and human influenza viruses. H1N1 influenza, sometimes known as swine flu, is an infectious disease caused by the influenza virus. Infection with the H1N1 influenza virus can cause severe sickness with lifestyle-threatening consequences. Scientists are studying the H1N1 virus to better understand its symptoms and propagation, as they are similar to those of ordinary flu. Proper diagnosis and therapy can help reduce the severity of this illness. Swine flu is most usually classified as the H1N1 influenza subtype. Swine flu viruses can be of different subtypes, including H1N2, H3N1, and H3N2. The 2009 swine flu outbreak that affected humans developed into the H1N1 strain. The 2009 pandemic virus evolved in pigs, however it was not entirely swine-derived. The virus combines flu genes from avian, swine, and human flu strains.

CHEMISTRY OF ANTINEOPLASTIC DRUGS

G. Swarajaya Laxmi, Assistant Professor, Omega College of Pharmacy

Abstract:

Chemotherapeutics are chemical compounds used to treat or cure cancer. These medicines target essential cell division pathways in rapidly developing cancer cells. Cancer medications are typically obtained from natural sources like plants and microbes, but can also be synthetic or semi-synthetic. Cancer can occur in any part of the body, although the frequency varies based on genetics, food, lifestyle, and environmental exposures. Improved diagnosis and treatment choices have led to better survival rates for the most common cancers worldwide, including lung, breast, and prostate. Research has focused on identifying endemic chemicals with possible anticancer capabilities, as naturally produced medicines have traditionally been used in cancer treatment. Several plant extracts have been examined for their anti-cancer potential, which will be addressed below. As the cancer patient population grows, so does the variety of chemotherapy therapies available. Analytical approaches are necessary for antineoplastic medications due to their high reactivity and toxicity. This includes formulation quality control, environmental and human exposure, and therapeutic drug monitoring.

GENETIC THERAPIES

Gadi Preethi Raj, Assistant Professor, Omega College of Pharmacy

Abstract:

Gene therapy has the potential to transform medicine by addressing the root causes of diseases rather than just treating symptoms. This article covers the methodologies, results, lessons learned, and recent breakthroughs in gene therapy as we reach the end of its first decade. Gene treatments have shown limited clinical success due to insufficient gene-transfer vectors. Recent clinical trials have shown significant improvement in selecting and optimizing vectors. Gene therapy is expected to reach its full potential in the second decade. In clinical studies, gene-based cancer medicines combine immunotherapy and chemotherapy. Ex vivo and in vivo cytokine gene transfer, drug sensitization through prodrug delivery, and use of drug-resistance genes to protect bone marrow from high-dose chemotherapy are among the tactics used. To target the underlying genetic lesions in cancer cells, techniques include inhibiting oncogene expression and replacing tumor suppressor genes. Clinical trial outcomes in patients with advanced malignancies unresponsive to standard treatments show that these medicines can achieve tumor shrinkage with minimal harm.

PHOTOCHEMICAL AND BIOLOGICAL ANALYSIS OF SPATHODEA CAMPANULATA

Ganaga Sravani, Assistant Professor, Omega College of Pharmacy

Abstract:

Spathodea campanulata P. Beauv., a large erect tree in the Bignoniaceae family, has been used medicinally in Africa for centuries. Traditionally, it is used to treat malaria, diabetes, stomach ulcers, wounds, skin infections, and viral disorders. The review aims to provide current information on the traditional applications, phytochemistry, pharmacology, and toxicology of *S. campanulata*. The plant's potential to treat ailments and provide a platform for future study is highlighted. This study covers literature from 1972 to 2021 on the morphology, traditional applications, phytochemistry, pharmacology, and toxicology of *S. campanulata*. Literature was gathered from online search engines including Google Scholar, PubMed, Science Direct, Core, and SemanticScholar. This plant contains a variety of chemical substances, such as iridoids, terpenoids, steroids, cinnamic acid derivatives, cerebrosides, flavonoids, and carotenoids. In vitro investigations have demonstrated anticancer, antibacterial, antiviral, insecticidal, larvicidal, and antioxidant properties. Preclinical research support the plant's long-standing use as an antimalarial, wound healing, antidiabetic, antibacterial, and anti-inflammatory drug with no negative effects. *S. campanulata* has shown promise in developing nutraceuticals for malaria and diabetes, as evidenced by in vivo and in vitro potency and toxicity investigations. The only reported clinical trial focuses on treating malaria with crude extracts. To fully utilize this extensively dispersed medicinal plant, further research into isolated components, clinical trials, and product development is necessary, given its vast traditional use.

CARBON NANOTUBES

Garela chandrakanth, Assistant Professor, Omega College of Pharmacy

Abstract:

Carbon nanotubes (CNTs) are one of contemporary science's most remarkable discoveries. CNTs are known for their unusual atomic structure, size, and attractive qualities, making them the stiffest and strongest material ever produced. This has sparked significant scientific interest. Over the last decade, researchers have explored the unique features of carbon nanotubes to create uses. Carbon nanotube-derived goods are gradually making their way into our daily lives and will soon be necessary for technological advancements. Computational tools and models, developed with advancements in computer technology, are now being used in study to acquire deeper understanding. This paper provides a review of recent research on carbon nanotubes and their uses in nanomaterials. This article will cover key factors that affect the characteristics of carbon nanotubes.

The ecosystem is crucial for achieving environmental balance

K. Satish Kumar, Assistant Professor, Omega College of Pharmacy

Abstract:

Recent scientific research indicates that the planet's life-supporting systems have reached critical thresholds. Humans have abused the planet's resources, including air, food, water, oceans, energy, rivers, soil, fish, forests, oil, lumber, gas, coal, and minerals. The culture glorifies greed, the pursuit of material gain, and the need for more comforts and conveniences. The aftermath of this assault can be seen everywhere. Keyword: Economic elements include appropriate livelihood, productive assets and processes, and their interaction with the environment. Social and cultural factors encompass health, education, shelter, equity, cultural norms, and their impact on the environment. Political dimensions encompass the ability to participate in decision-making processes, as well as their impact on the environment.

Formulation and evaluation of an oral dispersible tablet containing atorvastatin

K. Sindoor, Assistant Professor, Omega College of Pharmacy

Abstract:

Orodispersible tablets (ODTs), also known as rapid melts, disintegrate quickly in the mouth without chewing or requiring water. Atorvastatin Calcium has a limited oral bioavailability (14%), which is primarily due to intestinal clearance and first-pass metabolism. The study created orodispersible tablets of Atorvastatin calcium using Hibiscus rosa sinesis mucilage as a natural superdisintegrant to improve patient compliance, avoid hepatic first pass metabolism, and increase bioavailability. Tablet batches were tested for hardness, friability, drug homogeneity, wetting time, water-absorption ratio, and in-vitro dispersion time. Short-term stability investigations on the promising formulation found no significant changes in drug content or in vitro dispersion time.

A cross-sectional observational study examined the impact of screen use on sleep quality and duration

K. Thirupathi Babu, Assistant Professor, Omega College of Pharmacy

Abstract:

The study aims to evaluate how screen time affects sleep quality and length. The objectives are to analyze screen time, raise awareness about the health risks of excessive screen time, and evaluate sleep quality using the Pittsburgh Sleep Quality Index. Methodology: A prospective observational cross-sectional study was done in the urban area of Madanapalli. The study sample consisted of mobile users of all ages and genders who provided informed consent for participation. A questionnaire was developed after evaluating prior studies on mobile usage patterns, health consequences of EMR, and the Pittsburgh Sleep Quality Index. The study sample consisted of a sleep quality assessment scale.

Results: 82.1% of the studied population uses smartphones, with an average screen time of 7.5 hours. Women spend slightly more time on screens than men. The most popular applications are communication (28%), followed by entertainment and media (47.1). 86.1% of the population is aware of EMR and its health implications (71.5%). Females had a slightly higher sleep quality index (4.99) compared to males (4.6). A two-tailed student's t-test was used to evaluate the impact of screen time on PSQI scores, yielding a P value of 0.08.

Conclusion: While the study found that increased screen time affects sleep length and quality, more examination with larger samples is needed to strengthen the scientific evidence. Despite being aware of the harmful risks of EMR emissions from mobile phones, most participants struggle to manage their usage.

Developed and validated an HPLC method for extracting hesperidine from orange peel and citrus aurantium

K. Vaishnavi, Assistant Professor, Omega College of Pharmacy

Abstract:

The feed industry recognizes plant-derived chemicals as beneficial to cattle welfare and health. Citrus aurantium L. extract and Origanum vulgare L. essential oil have been shown to have significant anti-inflammatory and antioxidant properties in animals. To ensure reproducibility of natural feed additives, it's important to manage the concentration of active chemicals in plant-derived extracts due to their sensitivity to environmental factors and growing circumstances. This study validated the extraction of Hesperidin (HES) and Carvacrol (CAR), the active chemicals found in Citrus aurantium and Origanum vulgare extracts, as feed supplements. The quantification method for both analytes was confirmed using reversed high-performance liquid chromatography with a UV detector. The validated approach was tested on premixtures and final feed additives provided by a local feed plant to monitor the production process. The extraction procedure using methanol was effective and reproducible, with recovery rates over 90% for both analytes. The chromatographic method is accurate, exact (relative standard deviation percent less than 2.06%), and linear across tested concentration ranges, with regression coefficients of 0.995 and 0.999 for HES and CAR, respectively. The approach showed that the factory's diluting of premixtures resulted in less concentrated feed additives than stated on the label.

SIMULTANEOUS ESTIMATION OF RANITIDINE AND PARACETAMOL USING A UV SPECTROMETER

Kalahasthi Prudvi Raj, Assistant Professor, Omega College of Pharmacy

Abstract:

Paracetamol and Metronidazole are regularly taken together as an anti-inflammatory medication. In Indonesia, the combination of these two medications was formulated as a divided powder dose form. To implement patient-oriented medication, each compound's content has to be uniform. UV spectrophotometric and chemometric techniques were used to quantitatively assess paracetamol and Metronidazole in divided powder dosage form. The study used two multivariate calibration methods: principal component regression (PCR) and partial least squares (PLS). The PLS model was chosen for determining paracetamol and Metronidazole content after considering statistical parameters like R², RMSEC, RMSECV, and RMSEP. The linear models for calculating paracetamol and Metronidazole content were $y = 0.9877x + 0.4663$ (R²=0.9959) and $y = 0.9685x + 0.3401$ (R²=0.9875), respectively. The chemometrics model was used to analyze the content homogeneity of divided powder dose forms.

LOMIFLOXACIN formulation and evaluation using hydrochloride floating microspheres

Kollu Lavanya, Assistant Professor, Omega College of Pharmacy

Abstract:

The tablet was manufactured utilizing proper procedures and equipment, and post-compression studies were conducted accordingly. The post-compression investigations measured hardness, thickness, friability, weight variation, floating lag time, floating time, and drug release. Our investigation found no significant difference in the weight of individual tablets compared to the average. The hardness of the produced tablets ranged from 1.263 ± 0.07 to 1.184 ± 0.05 kg/cm². The thickness of all tablets ranged from 4.16 ± 0.1 to 4.26 ± 0.04 mm. Friability was below 1%. The floating lag time ranged from 15 to 22 seconds. Total floating time was determined to be between 6-7 hours. The swelling index ranged between 78% and 124%. The drug release of FT4 was determined to be good (94.524%).

The study found that when hardness rose, the floating lag time increased. F4 had a more controlled release compared to other formulations. Formulation F4 offers higher controlled release and bioavailability for Lomifloxacin Hydrochloride Hydrochloride. This study found that floating tablets of Lomifloxacin Hydrochloride hydrochloride improve stomach residence duration and bioavailability, leading to higher patient compliance.

A cross-sectional observational study on the disposal of expired and unused medications in a South Indian urban municipality

M. Nageshwar, Assistant Professor, Omega College of Pharmacy

Abstract:

Inappropriate pharmaceutical disposal techniques can pose environmental risks and harm people's health. The goal is to evaluate how unused and expired medications are disposed of in the urban municipality of Madanapalli.

Methods: A cross-sectional study of 700 respondents in Madanapalli, a municipality in south India, used a self-prepared and validated questionnaire to assess awareness, practice, and attitudes towards disposing of unused and expired medications. Descriptive statistics were performed with SPSS version 23.

Approximately 90% of respondents had leftover expiry medication in their houses, primarily antibiotics and antipyretics. 87% of respondents examined the medication's expiry date before purchasing. The majority of waste (63.8%) is disposed of in the dustbin. 36.2% of respondents received no information on proper medication disposal. The most common reasons for wasted medication are prescription expiration (40.2%) and therapy changes (11.1%). Additionally, 28.1% of respondents are uninformed of environmental concerns and the consequences of incorrect medicine disposal.

Conclusion: Improper disposal of unused/expired medication might have negative environmental and health consequences. Implementing medicine take-back programs in pharmacies and hospitals, as well as rigorous legislation for over-the-counter pharmaceuticals, will ensure safety.

Formulation and evaluation of fast-dissolving chlorpromazine hydrochloride tablets

M. Sucharitha, Assistant Professor, Omega College of Pharmacy

Abstract:

Chlorpromazine HCl is an effective anti-emetic that works by blocking D2 receptors in the Chemoreceptor trigger zone (CTZ) and inhibiting apomorphine-induced vomiting. This study aimed to create tablets of chlorpromazine HCl that dissolve quickly in the oral cavity. The tablets were made with five superdisintegrants, including sodium starch glycolate, crospovidone, croscarmellose, L-HPC, and pregelatinized starch. The mix was tested for angle of repose, bulk density, tapped density, compressibility index, and Hausner's ratio. Tablets were tested for hardness, friability, disintegration time, dissolve rate, and drug content and found to be within 1 minute. Selected superdisintegrants can be used to create fast-dissolving tablets with appropriate hardness and improved dissolution.

A case control study of factors influencing suicide attempts

Mashetty Sowmya, Assistant Professor, Omega College of Pharmacy

Abstract: Our goal is to investigate the psychological, socio-demographic, and personality aspects that contribute to suicide attempts.

Methods: From September 2018 to February 2019, we conducted a case control study at the Department of Psychiatry, Government General Hospital in Guntur, India. The study included 135 patients and 135 age- and gender-matched controls. The Eysenck Personality Questionnaire, Modified Kupuswamy Scale, Presumptive Stressful Life Event Scale, and Suicide Intent Scale were employed. Statistical analysis was conducted utilizing computer software.

Results: The majority of suicide attempters (n=69, 47.58%) were between 21 and 30 years old. Rural locations have a statistically significant higher rate of suicide attempts compared to metropolitan areas (Odds Ratio = 2.39). Uneducated people are more likely to attempt suicide (OR - 1.51). Alcoholism has been linked to an increased incidence of suicide attempts (OR 1.73). Individuals in the case group had higher average PSLES scores (166.8) compared to the control group (111.386). A family history of suicide attempts increases the probability of suicide (OR - 2.28).

Conclusion: Living in rural areas, drinking, lack of family support, and stressful life events were identified as significant risk factors for suicide attempts.

Simultaneous UV spectrophotometer methods were used to estimate the dosage of metformin HCL and glimepiride in both bulk and tablet form

Meer Mudabbir Ali, Assistant Professor, Omega College of Pharmacy

Abstract:

Two UV techniques have been devised for estimating Metformin HCl and Glimepiride in bulk and pharmaceutical dosage forms. They are simple, precise, affordable, rapid, and dependable. Method A uses the absorbance maxima method to determine absorption at 236 and 228 nm for Metformin HCl and Glimepiride, respectively. Method B measures the area under the curve (AUC) at 217-247 nm for Metformin HCl and 213-239 nm for Glimepiride. The detector response was linear for Metformin HCl and Glimepiride at concentrations ranging from 5 to 25 $\mu\text{g/ml}$. Recovery investigations revealed that Metformin HCl and Glimepiride had accuracy rates of 100.23% and 99.67%, respectively. The new approach was validated for linearity, accuracy (recovery), precision, and specificity. The results were statistically validated according to the ICH Q2 R1 guidelines and found satisfactory. The proposed procedures were effectively used to determine Metformin HCl and Glimepiride in commercial pharmaceutical dosage forms.

Spectrophotometric methods for estimating nimesulide and drotaverine simultaneously

Mekala Sai Lakshmi, Assistant Professor, Omega College of Pharmacy

Abstract:

We developed three simple spectrophotometric methods to estimate nimesulide and drotaverine from tablet dosage form. Method-I involves creating a Q-absorbance equation at 349 nm (isoabsorptive point) and 298.5 nm (max of nimesulide). Method-II involves measuring absorbances at two wavelengths: 298.5 nm (max of nimesulide) and 245 nm (max of drotaverine) in ethanol (95%). The Method-III multicomponent mode of analysis measures absorbance at two wavelengths: 298.5 nm (max of nimesulide) and 362.5 nm (max of drotaverine). Linearity ranges from 5-30 g/ml for both nimesulide and drotaverine across all three techniques. The approaches' accuracy and precision were statistically validated. All methods demonstrated strong repeatability and recovery, with a % RSD less than 1. The methods for analyzing nimesulide and drotaverine in bulk and mixed dosage form are rapid, specific, exact, and accurate, making them suitable for routine use. Keywords: Nimesulide, drotaverine, Q-Absorbance ratio method, multicomponent mode of analysis, and simultaneous equation approach.

Prescription Pattern in Geriatrics with Cardiovascular Diseases Using Beer Criteria

Myakala Suresh, Assistant Professor, Omega College of Pharmacy

Abstract:

Cardiovascular disease (CVD) is a global health concern and leading cause of premature morbidity and mortality. CVD encompasses disorders affecting the heart and circulatory system. The study aims to evaluate prescribing patterns for geriatric patients with cardiovascular illnesses using predefined criteria.

research Design: A prospective observational research.

Results and Discussion: Total 132 patients, 12 dropped out due to a lack of information. Out of 120 patients, 69 are male and 51 are female. In a 120-person sample, the most common cause was ischemic heart disease (30.8%), followed by myocardial infarction (24%), coronary artery disease (20%), congestive heart failure (13.3%), and unstable angina (11.6%). In a sample size of 120, male patients experience more complications than female patients. Conclusion: This study assessed prescribing patterns in geriatrics with Cardiovascular Diseases. Major complications reported in both male and female patients include ischemic heart disease with left ventricular dysfunction, myocardial infarction, coronary artery disease, angina, and congestive cardiac failure.

COVID-19 Infection: Understanding Age-Dependent Immune Responses and Immunological Strategies to Reduce Viral Burden

N. Sanjeevaiah, Assistant Professor, Omega College of Pharmacy

Abstract:

Covid-19 is caused by SARS-CoV-2, a novel strain of Corona virus that shares similarities with SARS infection. The virus was initially identified in Wuhan, China, in December 2019. The pandemic was declared by the World Health Organization (WHO) in March 2020 after spreading globally and infecting many people. SARSCoV-2 produces acute respiratory infections that vary in severity across age groups. Geriatric patients are more likely to experience severe illness. Currently, it has a moderate prevalence among children. There are changes in Covid-19 pathophysiology between pediatric and geriatric patients. Severe Covid-19 illness is linked to significant and persistent viral loads in elderly people. Children have a strong innate immune response due to trained immunity from live vaccines and frequent viral infections, resulting in early infection control at the site of entry. Additionally, their risk factors are lower than those of the elderly. SARS-CoV-2's principal target receptor, angiotensin converting enzyme-2 (ACE-2), diminishes with age, leading to lung defense effects. The presence of the enzyme Furin may also contribute to illness severity. This review will now primarily focus on clinical findings.

Assessing adverse drug reactions and drug-drug interactions in polypharmacy among geriatrics at a tertiary care hospital

N. Srikanth, Assistant Professor, Omega College of Pharmacy

Abstract:

Polypharmacy refers to the use of many drugs by a single patient, which is typical in geriatric individuals. Taking several drugs might increase the risk of adverse drug reactions, drug-drug interactions, and non-compliance, especially among the elderly.

A 6-month Prospective Observational Study was undertaken in a tertiary care hospital. Patients who meet the inclusion requirements are recruited. Demographic statistics and baseline variables such as age, gender, and social history are collected. Data were gathered from their case sheets and through direct patient interviews.

Adverse drug reactions and drug-drug interactions are evaluated using the WHO causality assessment scale, Stockley's drug interactions, and Medscape, with a focus on frequency analysis. Our study identified 72 ADRs and 22 medication interactions among 287 patients. Metformin and ceftriaxone are commonly associated with adverse drug reactions in elderly people. The most commonly prescribed medication interactions, including Glimipride with Ranitidine and Furosemide with Metformin, result in hypoglycemia. There were 9 mild, 5 moderate, and 7 severe drug interactions. Age and polypharmacy were found to be predictive of adverse medication reactions and drug interactions.

The clinical pharmacist is responsible for screening, monitoring, and preventing adverse medication reactions and interactions, as well as adjusting dosage or therapy as needed.

ASSESSING ADVERSE DRUG REACTIONS AND DRUG-DRUG INTERACTIONS IN POLYPHARMACY AMONG GERIATRICS AT A TERTIARY CARE HOSPITAL

P Mamatha, Assistant Professor, Omega College of Pharmacy

Abstract:

Polypharmacy refers to the use of many drugs by a single patient, which is typical in geriatric individuals. Taking several drugs might increase the risk of adverse drug reactions, drug-drug interactions, and non-compliance, especially among the elderly. A 6-month Prospective Observational Study was undertaken in a tertiary care hospital. Patients who meet the inclusion requirements are recruited. Demographic statistics and baseline variables such as age, gender, and social history are collected. Data were gathered from their case sheets and through direct patient interviews. Adverse drug reactions and drug-drug interactions are evaluated using the WHO causality assessment scale, Stockley's drug interactions, and Medscape, with a focus on frequency analysis. Our study identified 72 ADRs and 22 medication interactions among 287 patients. Metformin and ceftriaxone are commonly associated with adverse drug reactions in elderly people. The most commonly prescribed medication interactions, including Glimipride with Ranitidine and Furosemide with Metformin, result in hypoglycemia. There were 9 mild, 5 moderate, and 7 severe drug interactions. Age and polypharmacy were found to be predictive of adverse medication reactions and drug interactions. The clinical pharmacist is responsible for screening, monitoring, and preventing adverse medication reactions and interactions, as well as adjusting dosage or therapy as needed.

A NOVEL REVIEW OF NATURAL POLYMERS USED IN FAST DISPERSIBLE TABLETS, DISSOLVING FILM, AND GELS

P Praneeth Nikhilson, Assistant Professor, Omega College of Pharmacy

Abstract:

Pharmaceutical formulations consist of two ingredients: the active agent and excipients. Excipients enhance the manufacturing process and physicochemical properties of dosage forms. Polymers are essential excipients in various dosage forms. Drug release is influenced by compatibility, non-toxicity, stability, and economic factors. Polymers are classified as either natural or synthetic. Choosing the right polymer is crucial when building a dosage form due to its diverse applications. Manufacturers are increasingly opting for natural polymers to address issues with drug release and adverse effects.

Natural polymers are biocompatible and have no negative side effects due to their polysaccharide composition. This paper explores the benefits of natural polymers over synthetic polymers, as well as their potential use in medication delivery systems. Natural polymers have a greater impact on rapid dissolving tablets than manufactured polymers. Natural polymers are chosen over synthetic polymers due to their non-toxicity, low cost, easy availability, low concentration, and natural extraction for nutritional supplements. The natural super disintegrant promotes faster drug solubility and absorption, improving patient compliance. Natural polymers are used as binders, super disintegrants, and diluents to increase medication release from tablets while decreasing dissolution and disintegration time. The gel system is a promising medication delivery method that promotes sustained and controlled release, improves patient compliance, and provides comfort. Research on gel systems has great potential to advance medication delivery techniques.

PREPARATION AND EVALUATION OF HERBAL FACEWASH

P. Priyanka, Assistant Professor, Omega College of Pharmacy

Abstract:

Natural medicines are generally considered safer than synthetic alternatives due to less adverse effects. Herbal fusion is becoming increasingly popular in the global market. Herbal facewash is now being developed and evaluated with extracts of Tulsi (*Ocimum sanctum*), Aloe vera (*Aloe barbadensis*), Rose (*Rosa centifolia*), and Reetha powder (*Sapindus mucorossi*). While there are various local herbal formulae available on the market, we aim to provide pure herbal formulations without artificial ingredients. Research suggests that the plants contain microbes, antioxidants, and anti-inflammatory properties. Formulations were examined on color, appearance, consistency, washability, and pH. The herbal face cleanser contains extracts of orange peel, Tulsi, Reetha powder, Aloe vera extract, rose water, and honey. Face washes serve as both moisturizers and cleansers. They are typically used to treat greasy and dry skin. It gives necessary nutrients for healthy skin. The experiments concluded that the developed product is effective for facial care. Preparing extract Tulsi and orange peel leaves were dried in a hot air oven at 45°C, then ground into small bits using a grinder.

Reetha was crushed to a powder. Herbal medications were weighed, macerated with rose water in a conical flask, then sieved into homogeneous powder granules.

ORALLY DISSOLVING STRIPS

P. Soujanya, Assistant Professor, Omega College of Pharmacy

Abstract:

Quick dissolving films are gaining popularity as an alternative to quick dissolving tablets. The films disintegrate quickly on wet surfaces, including the tongue, allowing consumers to ingest the beverage without extra liquid. This convenience boosts marketing and patient compliance. The drug's direct absorption into systemic circulation prevents gastrointestinal breakdown and first-pass impact. This formulation is very popular among juvenile and geriatric patients, as well as those who are afraid of choking.

Over-the-counter films for pain management and motion sickness are now available in the US market. Several firms use transdermal medication delivery technology to create thin film formats. This paper summarizes current improvements in fast-dissolving buccal film formulations and evaluation parameters. Fast dissolving films are an innovative strategy for oral medication delivery. It ensures patient compliance, particularly among juvenile and geriatric patients. They can also be employed in situations that necessitate swift action. They offer advantages over traditional dose forms and can be utilized for dysphagia, Parkinson's disease, mucositis, or vomiting. A fast dissolving delivery method should be stable, transportable, easy to administer, require no additional packaging or processing, no water, and have a pleasing flavor.

DATA INTEGRITY: THE PHARMACEUTICAL INDUSTRY'S ROLE

P. Manasa, Assistant Professor, Omega College of Pharmacy

Abstract:

Public health benefits greatly from the contributions of the pharmaceutical industry. When it comes to medicine quality, safety, efficacy, and purity, data integrity is one of the most crucial factors in the pharmaceutical sector. Due to data integrity violations, several industries have recently received warning letters, and both local and international regulatory bodies have taken stringent measures. Pharmacists should incorporate data integrity into their policies. It states that the product was produced after fulfilling the specified requirements and quality standards, and that testing procedures were followed in accordance with the instructions provided in official publications. From the point of generation until the end of its life cycle, the FDA in the USA views data integrity as a crucial element that guarantees ensure only secure and high-quality medications are produced. Therefore, it is crucial to document every single detail of drug testing and manufacture, which should adhere to cGMP guidelines. The precision, consistency, and completeness of the data will ultimately determine the pharmaceutical firms' future.

2010 and 2015 Prices of Essential Medicines in Russian Public Health Facilities

P. Sushma, Assistant Professor, Omega College of Pharmacy

Abstract:

Purchasing medications in an efficient manner is essential to enhancing both universal health coverage and the prudent use of financial resources. The cost of drugs has increased in Russia during the past few decades. As a high-level intervention to lower medicine prices, the government decree on the norms for medicinal product procurement went into effect in 2013. The World Health Organization (WHO) and Health Action International (HAI) have worked together to develop a technique that measures cross-country comparisons, availability and affordability of medicines, and price comparisons [1]. The purpose of our research was to evaluate the impact of governmental initiatives aimed at lowering drug prices by comparing the costs of medications in Russian public hospitals between 2010 and 2015. To gather and handle the data, we used the WHO/HAI methodology [1]. The MPR for OB was 2.0 and for LPGs was 1.1 [0.2–2.6] in 2015. In comparison to 2010, state procurement medicine prices have significantly decreased in 2015—at least twice as much for LPMs and six times as much for OBs. The reduction of public procurement of originator brands (OBs) and preferential procurement of lowest priced generics (LPGs), as well as the overall reduction of procurement prices by at least two times for lowest priced generics (LPGs) and six times for OBs, are successful outcomes of interventions at the highest governmental level aimed at lowering medicine prices. When comparing the acquisition of medicines in 2015 to 2010, the government's initiatives proved to be more successful.

Costs and Post-Marketing Surveillance of Popular Brands of Ciprofloxacin Tablets Sold in Mongolian Cities

Pochi Reddy Sandeep Reddy, Associate Professor, Omega College of Pharmacy

Abstract:

Postmarketing surveillances are essential for gathering information about a product after marketing authorization has been given. Standards and regulations development, as well as product improvement, can benefit from the information. The purpose of the study was to evaluate in vitro quality control tests and determine the price of five different brands of 500 mg tablets of ciprofloxacin hydrochloride that are sold in Mongolia. Five distinct brands of 500 mg tablets of ciprofloxacin hydrochloride were tested and compared to the British Pharmacopoeia (BP) and the Mongolian National Pharmacopoeia (MNP) in terms of quality control characteristics. Using a WHO-standardized technique, the price of five popular brands of 500 mg tablets containing ciprofloxacin hydrochloride was acquired from the chosen retailers and wholesalers. The wholesale and retail costs of were compared using a Median Price Ratio (MPR) of the Management Sciences for Health (MSH) has reported on the equivalents of ciprofloxacin pills. Regarding weight variance (0.8%-3.4%) and friability (0.6-1.5), all brands complied. All samples were found to be within authorized limits, according to the assay content (Brand C -98.4%, Brand B -100.3%, Brand D -99.1%, Brand A -101.5%, Brand C -102.8%). Disintegration and dissolving tests, however, showed that Brands B and C did not comply. Merely 60% of the goods in the sample satisfied the BP and MNP standards. More importantly, the cost of subpar ciprofloxacin tablets was higher than that of those sold internationally. Frequent post-marketing studies would ensure the safety and quality of ciprofloxacin and help keep its price under control in Mongolia.

Examining Drug Availability and Inventory Management in Health Centers in The Indonesian Province of Yogyakarta

R. Sunil Kumar, Assistant Professor, Omega College of Pharmacy

Abstract:

The availability of drugs is crucial and directly affects the caliber of services. Pharmacists and patients alike rely on the availability of medications to ensure that patients receive the right prescriptions for their conditions. The budget is more effective and efficient when safe medications are available. This study's goal was to examine drug research and control initiatives carried out at DI Yogyakarta Province health clinics. This study is non-experimental and descriptive in nature. Twelve health facilities spread throughout three districts and cities—Sleman, Bantul, and Yogyakarta—were used for the study. Retrospective data collection was done by keeping track of drug management documentation as secondary data, in addition to conducting pharmacist interviews and observations. Drug availability, inventory turnover ratio, empty stock, excess stock, and so on are the indicators used.

A number of factors led to the overstock as there are a lot of medications with high rates of dead stock. Values of expired drugs ranged from 1.14% to 2.23% to 4.84% of the overall stockpile. Drug emptiness is still present, despite its low prevalence of 0.48%; its duration varies from 1.42 and 5.76 to 15.76%. Nonetheless, medicine stocks of 0.36%, 0.45%, and 10.48% are still lacking. The DI Yogyakarta Provincial Health Center has an excessive amount of drug availability, and the drug control system has not yet been put into place in an efficient and effective manner.

**Community Pharmacists' Perspectives On Obstacles to Maintaining
Community Pharmacies' Weight Management Services: A Qualitative Study
Conducted in Malaysia**

Ramyasree Andol, Assistant Professor, Omega College of Pharmacy

Abstract:

Community pharmacists (CPs) are providing more extended services and may be in a good position to support obesity control initiatives. Thus far, no research has examined the perspectives of CPs in Malaysia regarding the obstacles they face in managing their weight.

In the Klang Valley of Malaysia, twenty-four community pharmacists participated in a qualitative, in-person, structured interview process. The primary obstacles mentioned were (i) starting a conversation about weight with respondents who were overweight or obese; (ii) not having a private consultation room; and (iii) not having enough time or money. (iv) inadequate training and staffing levels; (v) and little public awareness. Nearly all of the participants admitted that they found it difficult to bring up the potentially delicate subject of weight with their clients for fear of offending them.

Participants regarded a lack of financial remuneration as one of the impediments. For some individuals, administering weight control therapy was hampered by a lack of time. This was particularly true for neighborhood pharmacies with a steady stream of patrons or those run by a single or pair of pharmacists. It was also mentioned that the pharmacy lacked qualified personnel. The results of a qualitative analysis demonstrated that community pharmacists were supportive of offering the Weight Management Service (WMS) and had a solid understanding of managing obesity. Nonetheless, community pharmacists in Malaysia placed a strong emphasis on observation, follow-up, and referral to other medical professionals for the efficient management of obesity-related disorders.

**Assessment of Community Pharmacists' Home Medication Review Program
(HMR-CP) For Patients with Type 2 Diabetes Mellitus (T2DM)**

S R Rahul, Assistant Professor, Omega College of Pharmacy

Abstract:

One chronic illness that requires patient dedication and knowledge of disease management is diabetes. The purpose of this experiment was to assess how well the Home Medication Review by Community Pharmacists (HMR-CP) program works to optimize diabetes care. From March to December 2018, a randomised controlled study was carried out in the Bandar Pasir Mas Health Clinic in Kelantan, Malaysia. A total of 166 T2DM patients were randomized to the intervention or control groups at random. Every three months, seven community pharmacists who had received HMR training made house calls to patients (i.e. baseline, 3-month and 6-month). Using the intention-to-treat population, clinical results, anthropometric data, and humanistic outcomes were ascertained. Drug-related problems (DRP) were categorized for the intervention group using the Pharmaceutical Care Network Europe Foundation (PCNE) classification system. While lowering the number of DRP and the expense of medicine waste, HMR-CP greatly enhanced the T2DM patient's glycaemic control, quality of life, medication adherence, and knowledge. However, there is still room for more research because the effects of HMR-CP on some clinical and anthropometric indicators are still unclear.

Community Pharmacists' Provision of Professional Pharmacy Services for The Secondary Prevention of Cardiovascular Diseases

S. Jithender, Assistant Professor, Omega College of Pharmacy

Abstract:

The purpose of this study is to determine the extent to which community pharmacists in Kuala Lumpur provide Professional Pharmacy Services (PPS) to support the secondary prevention of cardiovascular diseases (CVDs) and to identify the characteristics of pharmacies and/or pharmacists that are associated with the provision of PPS and CVD secondary prevention. From April to June 2019, community pharmacists in Wilayah Persekutuan Kuala Lumpur participated in a self-administered, cross-sectional survey. In all, 132 community pharmacists took part in the research. The majority of responders (66.7%) were female, and their average age was 33.06 ± 7.3 years. Merely eight participants possessed an academic qualification beyond a bachelor's degree in pharmacy. A total of 84.9% of the participants have worked in a retail pharmacy setting for one to five years (56.1%) and six to ten years (28.8%), respectively. Nonetheless, it seems that 86.4% of respondents offered at least four different kinds of activities. In terms of client CVD management, a relatively small percentage of respondents (24.2%) have experience working with other healthcare providers. The availability of PPS, how frequently one works with other healthcare professionals, how many pharmacists or support staff members are on duty, the qualities of the pharmacists, the pharmacy's infrastructure, and the sufficiency of the pharmacists' resources were all factors linked to the provision of CVD. Only continuing education programs, established documentation systems, and collaboration with other medical specialists were discovered to have an impact on CVD support, though. Although the majority of pharmacists participated in secondary prevention of CVD, a more structured intervention is required to increase the community pharmacist's engagement in secondary prevention of CVD.

Effect of Non-Adherence to Guidelines On Mortality in Patients Receiving Management for Acute Ischemic Stroke

S. Sarswathi, Assistant Professor, Omega College of Pharmacy

Abstract:

One of the main causes of death worldwide is stroke. Acute ischemic stroke cases are rising throughout Asia Pacific, especially in Malaysia. Many health organizations have established standards for the management of stroke; however, the effects of following these guidelines on patient outcomes, including mortality, are rarely investigated. This study aims to assess the effect of non-adherence to guidelines on mortality in patients receiving treatment for acute ischemic stroke. This study included all stroke patients diagnosed with first-ever acute ischemic stroke (AIS) who were followed up for six months after enrolling in the multiethnic National Neurology Registry (NNEUR). A review was conducted of the patients' initial clinical features, risk factors, neurological findings, therapies, complications, and outcome (survival status) data. The nonadherence rate (NAR) was computed using the NNEUR's key performance indicators (KPI). SPSS version 20.0 was used to analyze the data, and a p-value of less than 0.05 was deemed statistically significant. Between 0 and 5, the NAR ranged from 2 to 5. Patients with NAR > 2 ($p = 0.05$), POCI, and LACI clinical categories ($p = 0.023$) had a higher risk of mortality. Chi-square analysis indicates that the following variables are significant: Lacunar infarct (LACI), Posterior circulation infarct (POCI), Total anterior circulation infarct (TACI), Partial anterior circulation infarct (PACI), Nonadherence rate (NAR), and Lacunar infarct (TACI). Adherence to guidelines for managing acute ischemic stroke was not at all optimum. Mortality was linked to both patient risk factors and nonadherence. These results point to the need for ongoing quality evaluation and the application of guidelines-based practice in stroke care.

Relationship between Mortality Risk Factors and Length of Stay in Critically Ill Sepsis Patients: Clinical Features and Management (Predictors and Outcomes)

S. Srugandhi, Assistant Professor, Omega College of Pharmacy

Abstract:

One of the main causes of mortality in intensive care units (ICUs) is sepsis. It is also linked to long-term morbidity and medical expenses. The most crucial factor is proper management. In addition to patient-specific factors like age and comorbidities, factors associated with mortality include fluid infusion, infection management, and the timing of antibiotic administration. This study aimed to ascertain the relationship between the management and features of adult patients in the intensive care unit (ICU) with sepsis and the variables that predict 28-day mortality and ICU length of stay (ICU-LOS). a retrospective cohort analysis carried out in a Selangor tertiary ICU hospital. The sepsis files of 228 adult patients who satisfied the study's inclusion requirements were examined. Logistic regression modeling, both univariate and multivariate (MVA), and cox regression were used to identify association between ICU mortality and patient characteristics and care (CM). Additionally, the association between (CM) and (ICU-LOS) was determined using univariate and (MVA) linear regression. Of the 228 adult ICU patients, 119 (52.2%) were male and 193 (84.6%) died. OThis cohort of sepsis ICU patients had a high death rate. Clinical outcomes would be improved and ICU-LOS would be decreased by the hospital's initiative to diminish the establishment of various resistant germs and antibiotic stewardship initiatives.

**A Comprehensive Assessment of the Economic Impact of Echinocandins in
the Management of Invasive Candidiasis and Candidaemia**

Saidulu Abbagoni, Assistant Professor, Omega College of Pharmacy

Abstract:

Invasive candidiasis (IC) and candidemia are becoming more prevalent in critically ill and immunocompromised patients. Echinocandins are associated with favorable safety profiles and have been suggested as the first-line treatment; however, their cost is high. There have been numerous published economic evaluations in this field, but no systematic review with methodological assessment has been carried out. This study set out to determine and evaluate the complete economic assessment of echinocandins for the management of invasive candidiasis and candidemia. Peer-reviewed research was extensively searched for in a number of databases, including PubMed, SCOPUS®, Cochrane, Web of Science, EconLit, Heero.com, and NHS EED. The attributes of every study that was included, such as the nation, the year of the study, the year of costing, the kind of currency, the kind of economic evaluation, the purpose, Summary information was provided on the study's perspective, time horizon, comparators, cost components, outcome measure, sensitivity analysis, and economic findings. The 24-item Consolidated Health Economic Evaluation Reporting Standards statement (CHEERS checklist) was used to evaluate the reporting quality of the included studies, and the 10-item Drummond checklist was used to evaluate the methodological quality. Out of all the recognized papers, 1194 were included in the final review. Cost-effectiveness analysis (CEA) (n=8, 47%) or cost-minimization analysis (n=9, 53%) was the type of study. The majority of the research that were published used decision analysis models. Overall, the methodological quality and reporting of all economic research were good. When compared to their alternatives, echinocandins were proven to be a cost-effective strategy for treating infections caused by both non-albicans and albicans Candida species.

Pharmacy Practice in the Digital Age: Utilizing Telehealth and Remote Monitoring

Sana Yasmeeen, Assistant Professor, Omega College of Pharmacy

Abstract:

Telehealth and remote monitoring technologies have altered pharmacy practice, providing more access to patient care and drug management services. This research investigates the use of telepharmacy and remote monitoring systems in pharmacy workflows, focusing on their role in improving medication adherence, chronic illness management, and patient education. Leveraging digital tools improves pharmacies' ability to provide patient-centered care, resulting in better health outcomes and healthcare efficiency.

Harnessing Artificial Intelligence in Drug Discovery and Development

Srinivasa Chary Katroju, Assistant Professor, Omega College of Pharmacy

Abstract:

Artificial intelligence (AI) is transforming drug research and development by expediting the identification and optimization procedures. This research uses machine learning and deep learning algorithms to comprehensively investigate lead chemical identification, virtual screening, and prediction toxicological assessment. The incorporation of AI technologies into pharmaceutical research pipelines has the potential to drastically expedite drug discovery timeframes and improve therapeutic innovation.

Furthermore, these developments have the potential to transform therapeutic landscapes by providing new treatments for previously unmet medical needs and, eventually, improve patient outcomes. By leveraging AI, researchers can filter through massive amounts of data with remarkable speed and precision, revealing hidden patterns and links that older methods may have missed. This not only speeds up the drug research process, but also increases the possibility of identifying viable candidates for further clinical development.

Furthermore, AI aids in the optimization of drug candidates, lowering the risk of side effects while boosting overall safety profiles. The iterative nature of AI-driven techniques enables continuous improvement and refinement, ultimately leading to the development of more effective and focused medicines. Overall, the incorporation of AI into drug research and development constitutes a watershed moment in the pharmaceutical business, with far-reaching consequences for patient care and public health.

Emerging Trends in Antibiotic Resistance: Crisis Response Strategies

T. Susan Srujana, Assistant Professor, Omega College of Pharmacy

Abstract:

Antibiotic resistance is a major threat to global public health, necessitating immediate intervention efforts. This study looks at common antibiotic resistance mechanisms and novel techniques to treating microbial resistance. We hope to alleviate the growing problem of antimicrobial resistance by promoting antibiotic stewardship, investigating innovative antimicrobial agents, and encouraging interdisciplinary collaboration.

Furthermore, investing in R&D to identify new antibiotics and other treatment methods is critical for staying ahead of emerging resistance patterns. Furthermore, developing surveillance systems to track global antibiotic usage and resistance trends can help guide targeted actions and policy decisions. Together, these activities are critical for maintaining the efficacy of antimicrobial medicines and protecting global public health.

Exploring Novel Drug Delivery Systems for Targeted Cancer Therapy

Y. Krishna Kanth, Assistant Professor, Omega College of Pharmacy

Abstract:

This study looks into novel drug delivery techniques designed for precision targeting in cancer therapy. We hope to improve therapeutic efficacy while reducing side effects by leveraging nanotechnology and biomaterials. Our findings indicate intriguing options for individualized therapy regimens, opening up new possibilities for better patient outcomes in oncology.

Furthermore, investigating the integration of stimuli-responsive drug delivery systems has the potential to improve control over drug release kinetics and target specificity. Furthermore, the creation of multifunctional nanoparticles capable of both imaging and therapeutic delivery allows for real-time monitoring of therapy response. Collaboration among academics, doctors, and industry partners is critical for moving these innovative drug delivery systems from bench to bedside, ultimately benefiting cancer patients worldwide.