National Conference on Drug Delivery System

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NIOSOMES: A PROMISING ADVANCEMENT IN DRUG DELIVERY SYSTEMS

Dr. V. KIRAN KUMAR, Professor, MOTHER TERESA COLLEGE OF PHARMACY

Abstract: Niosome are non-ionic surfactant vesicles obtained by hydrating mixture of cholesterol and non-ionic surfactants. It can be used as carriers of amphiphilic and lipophilic drug. In niosomes drug delivery system, the medication is encapsulated in a vesicle. Niosomes are biodegradable, biocompatible non-immunogenic and exhibit flexibility in their structural characterization. The main object of this project work is the application of niosome technology is used to treat a number of diseases, niosome have good opportunity in research and beneficial for researcher and pharma industries. Niosome appears to be a well preferred drug delivery system over liposome as niosome being stable and economic also niosomes have great drug delivery potential for targeted delivery of anti-cancer, anti-infective agents. Drug delivery potential of niosome can enhances by using novel drug delivery concepts like proniosomes, discomes and aspasome. Niosomes also serve better aid in diagnostic imaging and as a vaccine adjuvant.Treatment of infectious diseases and immunisation has undergone a revolutionary shift in recent years. Not only a large number of disease-specific biological have been developed, but also emphasis has been made to effectively deliver these biological. Niosomes represent an emerging class of novel vesicular systems. Niosomes are self-assembled vesicles composed primarily of synthetic surfactants and cholesterol. Comprehensive research carried over niosome as a drug carrier. Various drugs are enlisted and tried in niosome surfactant vesicles. Niosomes proved to be a promising drug carrier and has potential to reduce the side effects of drugs and increased therapeutic effectiveness in various diseases.Thus, these areas need further exploration and research so as to bring out or to make for commercially available niosomal preparation.

PHARMACEUTICAL PHARMACOGENOMICS AND PHARMACOGENETICS EXPLORE HOW GENETICS AFFECT MEDICATION RESPONSE.

Dr.UDAY KIRAN.V , Associate Professor, MOTHER TERESA COLLEGE OF PHARMACY

Abstract:Pharmacogenetics and pharmacogenomics involve the study of the role of inheritance in individual variation in drug response, a phenotype that varies from potentially life-threatening adverse drug reactions to equally serious lack of therapeutic efficacy. This discipline evolved from the convergence of rapid advances in molecular pharmacology and genomics. Originally, pharmacogenetic studies focused on monogenic traits, often involving genetic variation in drug metabolism. However, contemporary studies increasingly involve entire “pathways” encoding proteins that influence both pharmacokinetics—factors that influence the concentration of a drug reaching its target(s)—and pharmacodynamics, the drug target itself, as well as genome-wide approaches. Pharmacogenomics is also increasingly moving across the “translational interface” into the clinic and is being incorporated into the drug development process and the governmental regulation of that process. However, significant challenges remain to be overcome if pharmacogenetics-pharmacogenomics is to achieve its full potential as a major medical application of genomic science.The approval of new medicines has slowed significantly over the past years. In order to accelerate the development of new compounds, novel approaches in drug development are required. Translational medicine or research, an emerging discipline on the frontier of basic science and medical practice, has the potential to enhance the speed and efficiency of the drug development process through the utilization of pharmacogenetics and pharmacogenomics. The utilization of these methods in the drug development process may therefore identify patient sub-populations that exhibit more effective responses and/or an improved benefit/risk profile upon treatment.

THE EMERGENCE OF DIABETES AFTER THE COVID-19 PANDEMIC.

Dr CHALLA PRADEEP KUMAR, AssociateProfessor MOTHER TERESA COLLEGE OF PHARMACY

Abstract:A novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (coronavirus disease 2019 (COVID-19]) is now at global pandemic levels causing significant morbidity and mortality. Patients with diabetes are particularly vulnerate and more likely to get severe complications when infected with this virus. Although the information continues to emerge, here we provide our perspective on initial outcomes observed in hospitalized patients with diabetes and the potential role played by the proinflammatory metabolic state in these patients that promotes fertile ground for the virus inflammatory surge, resulting in severe insulin resistance and severe hyperglycemia. The rapidly evolving renal failure, hypotension, pressor and steroid use, and variable nutritional support further complicates their management. Thus, timely implementation of glucose management protocols addressing these complex scenarios while also following COVID-19-related trajectories in inflammatory biomarkers and being cognizant of the health care provider exposure may substantially affect morbidity and mortal. people with diabetes have higher risks of various infections. Therefore, these diabetic patients might be at increased risk of COVID-19 and have a poorer prognosis. Up until now, little is known about critical role in the pathogenesis. This study aims to investigate the clinical characteristics of COVID-19 patients with diabetes and secondary hyperglycemia, as well as to explore the purported mechanisms. 80 confirmed COVID-19 subjects were classified into the euglycemia. group, secondary hyperglycemia group, and diabetes group. Severity of COVID-19 was defined based on the diagnostic and treatment guideline for SARS-CoV-2 issued by Chinese National Health Committee. According to the severity of the disease, patients of the mild type and common type were registered as mild cases (patients with minimal symptoms and negative CT findings), while patients of the severe type and critical type were enrolled as severe cases (patients with positive CT findings and different extent of clinical manifestations).

PRECISION MEDICINE REPRESENTS A NEW ERA IN THE FIELD OF MEDICAL TREATMENT.

Dr SRINIVAS REDDY DEVIREDDY, AssociateProfessor, MOTHER TERESA COLLEGE OF PHARMACY

Abstract:There is great potential for genome sequencing to enhance patient care through improved diagnostic sensitivity and more precise therapeutic targeting. To maximize this potential, genomics strategies that have been developed for genetic discovery — including DNA-sequencing technologies and analysis algorithms — need to be adapted to fit clinical needs. This will require the optimization of alignment algorithms, attention to quality-coverage metrics, tailored solutions for paralogous or low-complexity areas of the genome, and the adoption of consensus standards for variant calling and interpretation. Global sharing of this more accurate genotypic and phenotypic data will accelerate the determination of causality for novel genes or variants. Thus, a deeper understanding of disease will be realized that will allow its targeting with much greater therapeutic precision.Precision medicine describes the definition of disease at a higher resolution by genomic and other technologies to enable more precise targeting of subgroups of disease with new therapies. Prominent examples include cystic fibrosis and cancer.Clinical genomics exists at the intersection of sequencing-led discovery genetics in population cohorts and historical low-throughput approaches to genetic diagnosis in patients. As a result of the different aims of these two endeavours, technologies and algorithms that have been developed for discovery genomics need to be optimized before application to clinical medicine.Areas of need include the improvement of sequencing technologies. Current short-read approaches are limited in areas of the genome of low complexity (such as repeats), regions of high GC content, regions that are highly polymorphic or that include small-scale (indel) or large-scale (structural variant) disruption of the open reading frame.

A CRITICAL ANALYSIS OF VETERINARY DRUG DELIVERY SYSTEMS

Dr. CH.NAVEEN KUMAR, Associate Professor MOTHER TERESA COLLEGE OF PHARMACY

Abstract:One of the challenges to the success of veterinary pharmacotherapy is the limited number of drugs and dosage forms available exclusively to this market, due to the interspecies variability of animals, such as anatomy, physiology, pharmacokinetics, and pharmacodynamics. For this reason, studies in this area have become a highlight, since they are still scarce in comparison with those on human drug use. To overcome many limitations related to the bioavailability, efficacy, and safety of pharmacotherapy in animals, especially livestock and domestic animals, polymers-based drug delivery systems are promising tools if they guarantee greater selectivity and less toxicity in dosage forms. In addition, these tools may be developed according to the great interspecies variability. To contribute to these discussions, this paper provides an updated review of the major polymer-based drug delivery systems projected for veterinary use. Traditional and innovative drug delivery systems based on polymers are presented, with an emphasis on films, microparticles, micelles, nanogels, nanoparticles, tablets, implants and hydrogel-based drug delivery systems. We discuss important concepts for the veterinarian about the mechanisms of drug release and, for the pharmacist, the advantages in the development of pharmaceutical forms for the animal population. Finally, challenges and opportunities are presented in the field of pharmaceutical dosage forms for veterinary use in response to the interests of the pharmaceutical industry.

FUNCTIONALIZED GUM IN SOLID ANTIMICROBIAL DISPERSION

Dr. G. LAKSHMI NARAYANA REDDY , Associate Professor, MOTHER TERESA COLLEGE OF PHARMACY

Abstract: Solid dispersions have attracted considerable interest as an efficient means of improving the dissolution rate and hence the bioavailability of a range of poorly water-soluble drugs. Solid dispersions of poorly water-soluble drugs with water-soluble carriers have been reduced the incidence of these problems and enhanced dissolution. Since a solid dispersion is basically a drug–polymer two-component system, the drug–polymer interaction and performance.Poor water solubility is one of the major drawbacks for the various types of drugs and various approaches have been introduced for the enhancement of solubility of such drugs. The solubility behaviour of drugs is one of the most challenging aspects for formulation development. Solid dispersions are one of the most promising strategies to improve the oral bioavailability of poorly aqueous soluble drugs by reducing drug particle size to the absolute minimum, increasing surface area and hence improving drug wettability, bioavailability may be significantly improved. Solid dispersions are generally prepared with a drug which is having poor aqueous solubility and with a water-soluble hydrophilic carrier. This project work reviews the various preparation techniques for solid dispersion and compiles some of the recent technology transfers. The different types of solid dispersions based on the molecular arrangement have been highlighted. Some of the practical aspects to be considered for the preparation of solid dispersions, such as selection of carrier and methods of physicochemical characterization, along with an insight into the molecular arrangement of drugs in solid dispersions are also discussed. Finally, an in-depth rationale for limited commercialization of solid dispersions and recent revival has been considered.The focus of this project workon advantages, disadvantages and the method of preparation, and characterization of the solid dispersion.

ROLE OF NANOCRYSTALS AND NANOSUSPENSION IN DRUG DELIVERY SYSTEM

Dr. MD. MUSTAFA , AssociateProfessor MOTHER TERESA COLLEGE OF PHARMACY

Abstract:Rapid advancement in drug discovery process is leading to a number of potential new drug candidates having excellent drug efficacy but limited aqueous solubility. By virtue of the submicron particle size and distinct physicochemical properties, nanosuspension has the potential ability to tackle many formulation and drug delivery issues typically associated with poorly water and lipid soluble drugs.Nearly 40% of drugs coming to the market nowadays are having poor solvency related issues and 70% molecules in discovery pipeline are in effect fundamentally insoluble in water. Nanocrystals is an unmistakable instrument to tackle the issue identified with poor fluid solvency and helps in improving the bioavailability of various drugs as presented in the literature. The particle size reduction came about into temperamental nanocrystalline system and the phenomenon of ostwald ripening happens. These techniques are preparing to the improvement of nanosized objects, which can play out multiple technological tasks. There are a few couples of noteworthy benefits of nanocrystal formulations, for example, upgrade oral bioavailability, improved dose proportionality, reduced food effects, appropriateness for administration by all routes and probability of sterile filtration because of diminished particle size range. One of the most adequate preferences of nanocrystals is their wide scope of utilization, for example, ophthalmic delivery, oral delivery, transdermal delivery, pulmonary delivery, intravenous delivery and targeted delivery, especially for tumour and brain. The increment in commercial value of nanocrystals just as the measure of nanocrystal products in the market is picking up more of attention to be utilized as a strategy so as to get commercial advantages. In this project work a brief and accurate precis of nanosuspension is stated with specific spotlight on nanosuspension preparation methodologies, benefits and few major applications of nanosuspensions.

THERAPIES USING STEM CELLS

Dr. RAJARAO CHINTA, Associate Professor MOTHER TERESA COLLEGE OF PHARMACY

Abstract:Stem cell-based therapy, including human pluripotent stem cells (hPSCs) and multipotent mesenchymal stem cells (MSCs), has recently emerged as a key player in regenerative medicine. hPSCs are defined as self-renewable cell types conferring the ability to differentiate into various cellular phenotypes of the human body, including three germ layers. MSCs are multipotent progenitor cells possessing self-renewal ability (limited in vitro) and differentiation potential into mesenchymal lineages, according to the International Society for Cell and Gene Therapy (ISCT). This review provides an update on recent clinical applications using either hPSCs or MSCs derived from bone marrow (BM), adipose tissue (AT), or the umbilical cord (UC) for the treatment of human diseases, including neurological disorders, pulmonary dysfunctions, metabolic/endocrine-related diseases, reproductive disorders, skin burns, and cardiovascular conditions. Moreover, we discuss our own clinical trial experiences on targeted therapies using MSCs in a clinical setting, and we propose and discuss the MSC tissue origin concept and how MSC origin may contribute to the role of MSCs in downstream applications, with the ultimate objective of facilitating translational research in regenerative medicine into clinical applications. The mechanisms discussed here support the proposed hypothesis that BM-MSCs are potentially good candidates for brain and spinal cord injury treatment, AT-MSCs are potentially good candidates for reproductive disorder treatment and skin regeneration, and UC-MSCs are potentially good candidates for pulmonary disease and acute respiratory distress syndrome treatment.

DERIVATIVE METHOD SPECTROPHOTOMETRIC DETERMINATION OF ACYCLOVIR THAT HAS BEEN VALIDATED

T.RAMCHANDAR, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

ABSTRACT

A derivative spectrophotometric method was validated for quantification of acyclovir in poly (n-butylcyanoacrylate) (PBCA) nanoparticles. Specificity, linearity, precision, accuracy, recovery, detection (LOD) and quantification (LOQ) limits were established for method validation. First-derivative at 252 nm eliminated interferences from nanoparticle ingredients and presented linearity for acyclovir concentrations ranging from 5to 30.0 μg/mL (r = 0.9982). Precision and accuracy data demonstrated good reproducibility. Recovery ranged from 99.1 to 100.01. Thus, the proposed method proved to be easy, low cost, and accurate, and therefore, an useful alternative to quantify acyclovir in nanoparticles. Derivative UV-spectrophotometry is an analytical technique of enormous implication commonly in obtaining mutually qualitative and quantitative in order from spectra that are of unresolved bands, with respect to qualitative and quantitative analysis, it uses first or higher derivatives of absorbance .Derivative spectroscopy uses first or higher derivatives of absorbance with respect to wavelength for qualitative analysis and for quantification. The concept of derivatizing spectral data was first introduced in the 1950s, when it was shown to have many advantages. However, the technique received little attention primarily because of the complexity of generating derivative spectra using early UV-Visible spectrophotometers. The introduction of microcomputers in the late 1970s made it generally practicable to use mathematical methods to generate derivative spectra quickly, easily and reproducibly. This significantly increased the use of the derivative technique. In this application note we review briefly the mathematics and generation methods of derivative spectroscopy. We illustrate the features and applications using computer-generated examples.

A SYNOPSIS OF POST-COVID DIAGNOSIS

ZEENATH RUHY, *Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY*

ABSTRACT

The raging COVID-19 pandemic is in its third year of global impact. The SARS CoV 2 virus has a high rate of spread, protean manifestations, and a high morbidity and mortality in individuals with predisposing risk factors. The pathophysiologic mechanisms involve a heightened systemic inflammatory state, cardiometabolic derangements, and varying degrees of glucose intolerance. The latter can be evident as significant hyperglycemia leading to new-onset diabetes or worsening of preexisting disease. Unfortunately, the clinical course beyond the acute phase of the illness may persist in the form of a variety of symptoms that together form the so-called “Long COVID” or “Post-COVID Syndrome”. It is thought that a chronic, low-grade inflammatory and immunologic state persists during this phase, which may last for weeks or months. Although numerous insights have been gained into COVID-related hyperglycemia and diabetes, its prediction, course, and management remain to be fully elucidated.

PRELIMINARY PHYTOCHEMICAL AND ANTIMICROBIAL ACTIVITY OF CARICA PAPAYA LEAF AND SEED EXTRACT.

S SHALINI, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

Abstract:

The Carica papaya plant materials such as leaf, fruit (and seed) were collected and allowed to drying in dark place and ground in electric chopper. The powdered plant materials were filled separately in the thimble and extracted successively using a soxhlet extractor with distilled water, acetone, chloroform and ethanal. All the extracts were subjected to systematic phytochemical screening for the presence of phytochemical contituents. This indicates the presence carbohydrates, protein, vitamin C, tannin, alkaloids, flavanoids, steroids and saponin. Antimicrobial activities of all the extract were determined by well diffusion method. In this observation, the leaf of Carica papaya exhibits significant inhibitory activity against all test pathogens, in all plant material, ethanol extracts showed maximum activity.

MURRAYA KOENIGII WHOLE PLANT ANTI-DIABETIC ACTIVITY AND BIOCHEMICAL PARAMETERS IN DIABETIC RATS

D. BHARGAVI, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

Abstract:

The present study was carried out to evaluate the antidiabetic effect and histological parameters of Murraya Koenigii in Alloxan induced diabetic albino rats. The experimental rats weighed 200-250g were induced for diabetes with single dose of alloxan (120mg/kg body weight). Oral administration of chloroform extracts of Murraya leaf (250 and 500mg/kg body weight) for 30 days resulted in significant decrease of blood glucose from 296.62±20.12 to 80.22 ± 03.63 and decrease in the activities of enzymes of liver. To study the histology of Murraya Koenigii in Alloxan induced albino rats, sampling and staining of pancreas, spleen, liver and kidney tissues of diabetic and normal rats showed that strong antigenesity in beta-cells of the islets in control. Degenerative and necrotic changes and shrunken tissues in islets of langerhans were observed in diabetic induced group. Majority of the cells are protected from light degeneration when treated with 25 and 50 ml/kg/bw of Murraya and moderate antigenesity was noted in beta-cells of the islets of langerhans of the pancreatic tissue. Diabetic rats treated with murraya (25 ml/kg/bw) showed an improvement in the spleen histology and treated with Murraya (50 ml/kg/bw) shows a result similar to that of non- diabetic control. The results showed not only significant anti-hyperglycemic effect of Murraya extracts in experimental model of diabetes mellitus but also indicated a dose dependant activity of the extracts.

HERBAL SHAMPOO WITH TRIGONELLA FOENUM-GRAECUM FORMULATION AND EVALUATION

M CHAITANYA, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

ABSTRACT:

Abstract:

Hair dandruff is not a life threatening problem yet it often threatens your mental peace, you do not wish to be embarrassed by the white flaky dandruff powder all over shoulder. “Dandruff” is the mild form of seborrheic dermatitis is an inflammatory condition that is characterized by flaking and shedding of dead scalp at an abnormally high rate. Natural herbs are good solution for dandruff and “Fenugreek” i.e. Trigonella foenum-graecum is a natural herb which helps in killing a type of fungus i.e. Malassezia furfur and bacteria i.e. Staphylococcus which causes dandruff. Many scientist have confirmed that fenugreek contain a large amount of lecithin which is a natural emollient and give power to hair. A study shows the anti-fungal activity of fenugreek germinated seed extract at concentration of 0.35g/ml[1 ml of extract and 3 ml of water(1:4)]was found to be more effective in declining growth of dandruff causing fungus Malassezia furfur. Concluding that, the use of fenugreek seed extract was functional in inhibiting the growth of microorganism. Hence, the anti-dandruff shampoo containing Trigonella foenum-graecum L. seed extract is found to be effective in treatment of dandruff.

NOVEL 2-SUBSTITUTED BENZIMIDAZOLE DERIVATIVES: SYNTHESIS, IN VITRO ANTI-INFLAMMATORY ACTIVITY, AND MOLECULAR STUDY

G.MAHESH, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

ABSTRACT:

In this work, a series of benzimidazoles derivatives HW1-HW7 were synthesized and in vitro, in silico anti-inflammatory activity study was performed. All the synthesized compounds showed moderate to good anti-inflammatory activity in in vitro, in silico assay respectively. For the comparison diclofenac sodium is used as the standard compound for both in vitro, in silico study. It was found to be compound HW6 and HW5 shows very good anti-inflammatory activity (1.0 µg/ml and 1.2µg/ml) when compares with diclofenac sodium (0.5 µg/ml). Similarly in silico study of compound HW5 shows maximum binding energy of -10.36kcal/mol.

EVALUATION OF ANTI-OBESITY ACTIVITY OF TERMINALIA CHEBULA FRUIT EXTRACT FROM HIGH-FAT RATS

D BHANDAVI, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

ABSTRACT:

This study was done to investigate the anti-hyperlipidemic activity of Terminalia bellerica against high fat diet induced hyperlipidemia and obesity. Terminalia bellerica commonly known as Baheda, one of the most common plants being used in India since early times in many disorders one of the ingredients in many herbal formulations like Triphala, etc., used for cardiac disorders. The ethanolic extract of the fruits of Terminalia bellerica 250 mg/kg and 500 mg/kg body weight was administered p.o. for 20 days to test anti-hyperlipidemic activity. The parameters for evaluation of anti-hyperlipidemic activity are the physical parameters and the biochemical estimations. The physical parameters were gross examination of heart, heart weight and body weight ratio, liver weight, atherogenic index and basal metabolic index. In biochemical estimations, various cardiac enzymes like lactate dehydrogenase, and the lipid profile were measured. The results of present study show that alcoholic extract of Terminalia bellerica (500 mg/Kg) has significant reduction in various lipid levels as well as the elevated physical parameters like heart weight, body weight ratio, body weight gain and BMI against high fat diet induced hyperlipidemia and obesity compared to clinically used drugs, Atorvastatin (10 mg/kg) and Orlistat (pure drug 10 mg/kg).

ANACARDIUM ACCIDENTALE LEAVES EXTRACT ANTI-ULCER ACTIVITY IN ALBINO RATS

G. SRAVANTHI, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

ABSTRACT

Anacardium occidentale(AO) has been used to treat peptic ulcer disease in Ethiopian folk medicine, but its efficacy has not been validated. The present study was therefore carried out to evaluate the anti-ulcer activity of 80% methanol leaf extract of AO in rats. The effect of AO extract on gastric ulcer in rats in pylorus ligation-induced and ethanol-induced models was studied using single dosing (100, 200, 400 mg/kg) and repeated dosing (200 mg/kg for 10 and 20 days) approaches. Ranitidine (50 mg/kg) and sucralfate (100 mg/kg) were used as the standard drugs. Depending on the model, outcome measures were volume and pH of gastric fluid, total acidity, ulcer score, percent inhibition of ulcer score, ulcer index as well as percent inhibition of ulcer index. Data were analyzed using one-way analysis of variance followed by Tukey's post hoc test, and $P<0.05$ was considered as statistically significant. AO significantly ($P<0.001$) reduced gastric ulcer index by 55.82% and 62.11%, respectively, in pylorus ligation-induced and ethanol-induced ulcer models at the 400 mg/kg dose, which is comparable to the standard drugs. Ten and 20 days pre-treatment with AO 200 exhibited significant ($P<0.001$) ulcer inhibition by 66.48% and 68.36% (pylorus ligation-induced model) as well as 71.48% and 85.35% (ethanol-induced model), respectively. AO possesses both dose-dependent and time-dependent anti-ulcer effect in the two models. The oral median lethal dose (LD_{50}) is estimated to be higher than 2000 mg/kg for the crude hydroalcoholic extract, and secondary metabolites such as flavonoids, tannins, and saponins were present. The findings of this study confirmed that AO has anti-ulcer pharmacologic activity due to one or more of the secondary metabolites present in it. Therefore, this study validates its anti-ulcer use in Ethiopian folk medicine. Further investigations on isolation of specific phytochemicals and elucidating mechanisms of action are needed.

AZADIRACHTA INDIA STEM BARK ANTI-OXIDANT PROPERTY EVALUATED FOR CANCER POTENTIAL

N NAVEEN KUMAR, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

ABSTRACT:

Barks extracts of four different trees (*Azadirachta indica*, *Terminalia arjuna*, *Acacia nilotica*, and *Eugenia jambolana* Lam.) in three different solvents 80% methanol, 80% ethanol, and 80% acetone (solvent:water, 80:20 v/v) were evaluated for their antioxidant activity, total phenolic (TP), and total flavonoids (TF) contents. Antioxidant activity (AA) was determined by measuring reducing power, inhibition of peroxidation using linoleic acid system and 2,2′-diphenyl-1-picrylhydrazyl radical (DPPH) scavenging activity. Significant ($P < 0.05$) differences were observed in the TP, TF, inhibition of linoleic acid oxidation and $DPPH^{\cdot}$ scavenging activity of different bark extracts. Nevertheless, minute variation was observed in reducing power. All the bark extracts exhibited wide range of total phenolic, 7.8–16.5 gallic acid equivalents and total flavonoid contents, 1.59–4.93 catechin equivalents. Reducing power at 10 mg/mL extract concentration ranged from 1.34 to 1.87. Different bark extracts inhibited oxidation of linoleic acid by 44–90% while DPPH radical scavenging activity ranged from 49% to 87%. Extraction efficacy of components with antioxidative properties was lowering in the following order: ethanol > methanol > acetone. Good correlation was observed between TP and DPPH scavenging activity among the extracts. *A. nilotica* bark had the highest amounts of TP, ranging from 9.2 to 16.5 g/100 g, while the highest AA as measurement by inhibition of linoleic acid oxidation is offered by bark from *E. jambolana* Lam. The same tree showed the highest DPPH scavenging activity and reducing power. The correlation among the results of different antioxidant assays although revealed a strong relationship between some of the assays, however, a number of different methods may be necessary to adequately assess the in vitro antioxidant activity of a specific plant material.

METOPROLOL TARTRATE BUCCAL PATCHES: FORMATION AND EVALUATION.

M.SHIVA RAJ, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

ABSTRACT:

The aim of study was to prepare and characterize buccoadhesive tablets of Metoprolol tartrate using different Mucoadhesive polymers such as Carbopol 934, Sodium alginate and HPMC K4M in combination. Ten formulations were prepared with varying concentrations of polymers using combination of two polymers in each formulation. Formulations F1 to F5 were composed of Sodium alginate and HPMC K4M mixture in drug: polymer mixture ratios of 1:0.75 to 1:1.75 where as formulations F6 to F10 were composed of carbopol 934 and HPMC K4M mixture in same drug: polymer mixture ratios. The prepared tablets were evaluated for physicochemical parameters such as hardness, thickness uniformity, weight variation, surface pH, Ex-vivo residence time and moisture absorption studies. The prepared tablets were also evaluated for bioadhesive strength and in vitro drug release. In vitro bioadhesive strength and in vitro release studies showed that formulation F8 containing 1:1.25 ratio of drug and polymer combination showed optimum bioadhesive and exhibited optimum drug release (77.33±0.23). FTIR results showed no evidence of interaction between the drug and polymers.

THE FORMULATION AND EVALUATION OF A HERBAL SHAMPOO INCLUDING RAMBUTAN LEAF EXTRACT.

S. SARANYA , Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

ABSTRACT

Rambutan (Nephelium lappaceum Linn.) can be found widely in Malaysia, belongs to the family Sapindaceae. The leaves of rambutan are traditionally used for hair care and many people experience a noticeable change in their hair quality in just a few weeks. However, there is no study has been reported in herbal shampoo preparation containing rambutan leaves extract. The present study was aimed to formulate an herbal shampoo containing rambutan leaves extract and to evaluate its physicochemical properties. The herbal shampoo was formulated by incorporating the methanolic extract of rambutan leaves. Several tests such as visual inspection, pH, percentage of solid contents, foam ability and stability studies were performed to determine the physicochemical properties of the formulated herbal shampoo. The conditioning performance was evaluated by administering a blind test to 11 volunteers. The majority of the volunteers rated that the tresses washed with formulated shampoo was found to be 2.18 ± 0.40. The results clearly indicate that the formulated shampoo is having a satisfactory conditioning performance level. All the ingredients used to formulate shampoo are safer and the physicochemical evaluation showed ideal results, but further research is required to improve its quality and identify the constituents that are responsible for the performance.

FORMULATION AND EVALUATION OF OLIVE LEAF EXTRACT SHAMPOO

D.SATISH, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

Abstract:

The study aimed at formulating a herbal shampoo containing olive leaves extract and evaluating its physiochemical properties. Olive leaves extract in shampoo is commercially available in Palestine, but because the R&D departments do not get sufficient attention neither in the private nor in the public sector, most of those products are a reproduction of what has been produced in developed countries. Moreover, there are still few data available on their stability in literature. The herbal shampoo was formulated by incorporating the ethanolic extract of olive leaves standardized for Oleuropein, which has antioxidant, anti-inflammatory and hair protectant properties. Several tests such as visual inspection, pH, percentage of the active ingredient and foam ability were conducted. Stability studies were also performed to determine the physiochemical properties of the formulated herbal shampoo. Three formulas (F1, F2 and F3) containing the same concentration of olive leave extract (1.0% w/w) were prepared. All ingredients used to formulate the shampoo were found to be safe and the physiochemical evaluation showed ideal results. Stability studies showed a stable homogenous appearance during six months of storage at different temperatures (4-8 oC, 40 oC and at ambient temperature). However, formula 3 gave optimum sta

SYNTHESIS, QSAR, AND MOLECULAR DOCKING OF 2,4-THIAZOLIDINEDIONE DERIVATIVES

K. VIKRANTH, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

Abstract:

Synthetic organic chemistry involves selection and optimization of lead, synthesis and characterization of work for practical purposes. A series of new thiazolidinedione derivatives have been designed and synthesized through microwave-assisted technique. The synthesized compounds were screened by Insilco methods like molecular docking, QSAR studies in order to explore the anti-diabetic activity, synthetic assessability of compounds against the peroxisome proliferator-activated the receptor (PPARγ). Compounds which showed higher glide score than standard (Pioglitazone) were synthesized using the microwave. Compounds were characterized with the help of FTInfrared spectroscopy, Proton NMR, C-13 NMR spectroscopic studies and Lc-Ms.

Keywords: Anti-diabetic activity, Peroxisome proliferator-activated receptor (PPARγ), 2, 4-thiazolidinedione derivatives, pioglitazone, Molecular Docking.

UV SPECTROPHOTOMETRY IN TABLET ESTIMATES AND VALIDATES ARTEMETHER AND LUMEFANTRINE

M. SANTOSH, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

Abstract:

A UV spectrophotometric method has been developed for the simultaneous determination of Artemether and Lumefantrine. The spectroscopic method for estimation of Artemether and Lumefantrine employed Area under curve method for analysis using Ethanol as solvent. Artemether has absorbance maxima 253.2 nm and Lumefantrine has absorbance maxima 235.2 nm and both these drugs obey Beer's law in concentration range of 4.24 -67.84 μg/ml for Artemether and 4.68 -28.08 μg/ml for Lumefantrine. The recovery studies ascertained the accuracy of the purposed method and the results were validated as per ICH guidelines. The results were found satisfactory and reproducible. The method was applied successfully for the estimation of Artemether and Lumefantrine in tablet dosage form without the interference of common excipients.

FACTORS CREATING FIRST-LINE ANTI RETROVIRAL THERAPY (ART) FAILURE IN INDIAN TERTIARY CARE GOVERNMENT SETTINGS

B. SAMPATH KUMAR, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

Abstract:

Background: HIV is a lenti virus that causes HIV infection in humans in which progressive failure of immune system allows life threatening opportunistic infections and cancers to thrive. So it is important to study the factors that lead to failure of first line ART.

Aims and Objectives: To find out the factors leading to failure of first line ART like socio-demographic factors, clinical factors, immunological factors, virological factors etc.To assess the CD4 count in subjects using first line and second line ART. To assess the viral load in subjects who failed first line ART.

Methodology: Retrospective cohort observational study was conducted to assess the factors leading to the failure of first line ART. HIV patients who met inclusion criteria were informed consented and included in the study and relevant data was collected in a prior designed data collection form.

Results: In our study we found that controls were more among 30-40 yrs age. Males and females were equally distributed in cases and controls. Widowed females were found more among cases. Illiterates were found more among cases than controls. Cases children were more HIV seropositives than controls. Cases were more in WHO stage-4 clinical staging than controls. Cases had more number of drug substitutions, drug related adverse effects, low medication adherence, more number of LFUS and hospitalisations than controls. Cases were more in number who travels more than 60 minutes and more time gap between diagnosis and time of ART initiation and cases had raised RFTS, LFTS, and lipid profile at time of treatment failure. Cases had more serious opportunistic infections than controls.

DIPEPTIDYL PEPTIDASE-4 INHIBITORS MOLECULAR DOCKING

K. MADHU, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

Abstract:

Dipeptidyl peptidase (DPP)-IV inhibitors are a new approach to the treatment of type-2 diabetes. DPP-IV is a member of a family of serine peptidases that includes quiescent cell proline dipeptidase (QPP), DPP8, and DPP9. DPP-IV is a key regulator of incretin hormones, but the functions of other family members are unknown. To determine the importance of selective DPP-IV inhibition for the treatment of diabetes, we conducted molecular docking studies on clinical inhibitors of DPP-IV.

HYPERTENSIVE PATIENTS IN RURAL GUNTUR DISTRICT, SOUTH INDIA, ASSESSED THEIR HEALTH-RELATED QUALITY OF LIFE.

B.LAXMI PRASANNA, Assistant Professor MOTHER TERESA COLLEGE OF PHARMACY

Abstract:

Background: Hypertension is considered as one of the leading causes of death and disability, and its prevalence is rapidly increasing in developing countries. Adequate treatment of high blood pressure lowers the cardiovascular risk and other complications like vascular disease, and chronic kidney disease. However, the major problem for controlling hypertension is compliance with treatment.

Aim and Objectives: To study and assess the quality of life in patients suffering from hypertension.

Methodology: A prospective observational cohort study was conducted for a period of 6 months in a rural area of Guntur. A total of 300 hypertensive patients who are newly diagnosed or suffering from hypertension since 3 years were recruited. Blood pressure was measured by using a sphygmomanometer and other demographics were collected. Health related quality of life was assessed by using 36-item short form (SF-36) and respective scores were calculated.

Results: By using SF-36 questionnaire Physical health (49.4) was the component mostly effected in hypertensive patients followed by Vitality (61.75), emotional aspects (69.06), pain (67.3), social functioning (78.54), appear to be least affected.

Conclusion: Proper treatment and awareness about hypertension is necessary to improve patient's quality of life. Good compliance not only improves the clinical outcomes, it is also having a great impact on improving quality of life and reducing health care costs which are due to complication and co-morbidities of hypertension.

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