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STUDY ON THE EFFECT OF AGANOSMA CYMOSA AND PLUMERIA RUBRA METHANOL EXTRACT ON DIFFERENT MODELS OF INDUCED LIVER TOXICITY IN EXPERIMENTAL RATS

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The Hepatoprotective effect of Aganosma cymosa and Plumeria rubra methanol extracts investigated on Carbon tetra chloride (CCl4), Paracetamol (PCM) and Antitubercular drugs induced liver damage in rats. The variations in the level of hepatic biomarkers viz. Aspartate aminotransferase (AST), Alanine aminotransferase (ALT), Alkaline Phosphatase (ALP), Bilirubin levels were measured in a normal and treated group of rats. The potency of the plant extract in two different doses (200 mg/kg and 400 mg/kg b.w.) were compared with a popular hepatoprotective drug silymarin. From the results, the plant extract were found to be effective in reducing the elevated enzyme levels that were caused due to CCl4, PCM and Antitubercular drug intoxication. Among the two administered doses of Aganosma cymosa methanol extract (ACE) and Plumeria rubra methanol extract (PRE), 400 mg/kg b.w. of ACE and PRE gave significant ($p<0.001$) results. The Histopathological studies also support the results with reversal of damaged liver cell architecture in the ACE and PRE treated groups. Hence, both the plants selected showed good Hepatoprotective effect.

Keywords: Hepatoprotective effect, Aganosma cymosa, Plumeria rubra, Carbon tetra chloride, Paracetamol, Antitubercular drug.

MAST CELL STABILIZING, ANTIANAPHYLACTIC AND BRONCHODILATORY ACTIVITY OF METHANOLIC EXTRACT OF AVERRHOA CARAMBOLA FRUIT.

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This work was mainly aimed to study the mast cell stabilizing, anti-anaphylactic and bronchodilatory activities of methanolic extract of Averrhoa carambola (ACME). Mast cell stabilization activity was investigated by Compound 48/80 induced mast cell degranulation in rats and antianaphylactic activity was performed by determining the mortality rate of mice upon exposure to compound 48/80. The bronchodilatory effect of ACME was studied on histamine aerosol-induced bronchospasm using guinea pigs, in which occurrence of preconvulsive dyspnea (PCD) was noted as end point. Treatment with ACME (100, 200 and 400mg/kg) showed significant ($p<0.05$) protection of rat peritoneal mast cells and significantly ($p<0.05$) reduced the mortality of mice in a dose dependent manner. ACME significantly ($p<0.05$) increased the time of preconvulsive dyspnea (PCD) in a dose dependent manner that suggestive of bronchodilating activity. Phytochemical studies observed presence of saponins, tannins, steroids, alkaloids, flavonoids and glycosides. From these finding, we concluded that ACME possesses mast cell stabilizing; anti anaphylactic and bronchodilatory activity which might be used in treatment of asthma.

Keywords: Anaphylactic Mast cell Compound 48/80 Averrhoa carambola Histamine.

CANCER PREVALENCE AND INCIDENCE, MANAGEMENT OF CHEMOTHERAPYINDUCED ADRS IN CANCER CARE HOSPITAL

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Introduction: This study aims to determine the prevalence of various types of cancers and to study the incidence of chemotherapy-induced ADRs in different cancer patients along with their management. This research helps to target different groups of people at higher risk of developing cancer. It is performed by modifying the risk factors and following secondary prevention and chemoprevention strategies.

Methodology: The study design is carried out as a Retrospective, Prospective, and Observational study which is conducted for 4 months. Subjects for this study were selected based on the inclusion and exclusion criteria.

Result: A total of 220 case subjects were analysed for the study. The maximum number of patients belong to the age group of 54-64 (27.5%) where females take the lead with 111 (51%) cases most of the subjects in this region were diagnosed with cervical cancer (19.6%) and tobacco smoking as the highest risk factor with 16%. 145 subjects underwent chemotherapy and 80 developed ADRs. The most common ADR was found to be nausea with or without vomiting (14.3%). The incidence rate of chemotherapyinduced ADRs was found to be 121.38 and subjects of age 52-61yrs and Males (60%) are majorly affected by ADRs during this study.

Conclusion: This study showed the most common type of cancer and risk factor responsible for cancer in this specified area. Apart from this we also found the highest affected age group and gender. The incidence rate of chemotherapy-induced ADRs, commonly occurring ADRs of different chemotherapy drugs were also determined. Age group and gender which are more affected by chemotherapy ADRs were determined along with their management.

Keywords: Cancer, Risk factor, Prevalence, Incidence rate, Chemotherapy, Adverse drug reactions, Management

TENOFOVIR ALAFENAMIDE FUMARATE MICROSPHERES, PROCESS PARAMETERS FOR ENHANCED PERMEABILITY AND LIVER TARGETING

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Aims: Chronic hepatitis B (CHB) infection is a serious global health problem and one of the main causes of chronic liver disease, cirrhosis. Tenofovir Alafenamide Fumarate (TAF) is a prodrug of Tenofovir, a nucleotide analogue with limited oral bioavailability. TAF is considered to be a BCS Class III substance (high solubility, low permeability). The aim of the study was to develop the Tenofovir Alafenamide Fumarate (TAF) microspheres to improve permeability.

Study design: Preparation and Evaluation of Microspheres.

Place and Duration of Study: Department of pharmaceutics, Mallareddy Institute of Pharmaceutical Sciences, Affiliated to JNTUH, Hyderabad, Telangana, India, between January 2018 and June 2019.

Methodology: TAF loaded chitosan microspheres were prepared by emulsion cross linking method using glutaraldehyde as cross-linking agent. The prepared microspheres were characterized by morphology, size distribution, encapsulation efficiency. The permeability study was evaluated by Ex-vivo permeation studies. The optimized formulation was subjected to FTIR studies to examine the Drug Excipient Compatibility.

Results: Scanning Electron Microscopy (SEM) studies indicated that the microspheres are spherical inshape. The optimized formulation has average particle size of 11.00 ± 0.05 μm, the encapsulation efficiency 68± 0.04% and the percentage (%) yield of 94%. FTIR studies indicated that the drug and polymer are compatable with each other. In Ex-vivo permeation studies of optimized formulation 80% of drug was permeated with in 60 min.

Conclusion: TAF microspheres could improve the absorption by increasing the permeability.

Keywords: Microspheres; emulsion cross linking; glutaraldehyde and Tenofovir Alafenamide Fumarate (TAF).

STUDY OF DEMOGRAPHIC ANALYSIS, CLINICAL CHARACTERISTICS, DIAGNOSIS, MANAGEMENT, AND COMPLICATIONS INCOVID-19 PATIENTS

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Objective: This study aims to study the demographic analysis, clinical characteristics, diagnosis, and management in COVID-19 patients and assess the complications in COVID-19 patients. Methods: A retrospective observational single centered study is carried out to study the demographic analysis, clinical characteristics, diagnosis, management, and complications in COVID-19 patients.

Results: Among 100 COVID-19 patients, 58% were male and 42% were female. Percentages of age group between 60–70 years (27%), 50–60 (20%), 40–50 (16%), 70–80 (16%), 30–40 (8%), 20–30 (5%), 80–90 (4%), and 10–20 (4%). Co-morbidities were diabetes (44%), hypertension (HTN) (28%), coronary artery disease (21%), thyroid (19%), chronic obstructive pulmonary disease (12%), anemia (8%), and renal impairment (4%). Signs and symptoms were fever (88%), cough (80%), shortness of breath (72%), fatigue (68%), myalgia (60%), loss of appetite (52%), cold (24%), loss of smell and taste (20%), diarrhea and vomiting (12%). (97%) of the patients had two or more symptoms. Diagnostic test include reverse transcription polymerase chain reaction (RT-PCR) (100%), high-resolution computed tomography (HRCT) (100%), O2 saturation (99%), D-dimer (65%), c-reactive (60%), Procalcitonin (60%), and also lactate dehydrogenase, interleukin-6, prothrombin time, international normalized ratio, ferritin, complete blood count, white blood cell. Treatment includes antiviral (100%), antibiotics (100%), corticosteroids (73%), immunosuppressant (54%), and antihypertensive, antidiabetic, antiplatelets, bronchodilators, vitamins, and mineral supplements.

Conclusion: COVID-19 infects the males more and average ages of 65 years are at risk. HTN and diabetes were most common co-morbid condition. Fever and cough are major followed by weakness sob and cold. RT-PCR and HRCT are accurate tool to detect COVID-19. Although standard treatment is not yet available antibiotics and antiviral are used followed by

corticosteroids. The majority of the patients have mild and moderate injection and with the lowest death rate. Older age and co-morbid conditions are major risk factors.

Keywords: COVID-19, Fever, Cough, High-resolution computed tomography, Reverse transcription polymerase chain reaction, Hypertension, Corticosteroids, Interleukin-6, Immunosuppressant.

FORMULATION DEVELOPMENT AND IN-VITRO EVALUATION OF SEXAGLIPTINLOADEDFLOATINGMICROSPHERES

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The present study has been a satisfactory attempt to formulate floating microspheres of Saxagliptin, a novel anti- diabetic medicine charitable a CR of the drug. From the investigational consequences it can be completed that, FT-IR was exhibits there is no any important shifting of the peaks so it proven the small phrase constancy of the drug in the beads. Chitosan & albumins are used in microspheres preparation. Good% drug entrapment & % yields were attaining with together the polymers. Among all preparations were within the limits so, they are easily filled into capsules. % CDR significantly reduced with enhanced in polymer concentration. S7 formulation showing better drug release among remaining formulation drug release for 12 hours was obtained 83.91±3.16% follows First order kinetic model & Higuchi model.

Keywords: Saxagliptin, Chitosan, Albumin, Microspheres

FORMULATION DEVELOPMENT AND IN-VITRO EVALUATION OF ELVITEGRAVIR LOADED SOLID DISPERSIONS TO SUSTAINED RELEASE TABLETS

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The aim of the present study is to formulate Sustained release tablets of elvitegravir solid dispersions. The enhancement of oral bioavailability of poorly water soluble drugs like Elvitegravir could be improved by enhancing aqueous solubility. Among numerous ways of enhancing drug dissolution, solid dispersions and inclusion complexation are promising techniques to enhance the dissolution of poorly water soluble drugs. The calibration curve of Elvitegravir was obtained in the range of 2-10 µg/mL at the wavelength of 313 nm. It has shown good linearity with a regression coefficient of 0.999 (r2 value). This result exhibit a direct relationship between concentration of polymers and drug release. Among the various formulations tablets of batch E2 prepared with 40mg Guar gum showed complete release of drug within 24 hrs.

Keywords: Elvitegravir, solid dispersions, Sustained release tablets, Guar gum

FORMULATION AND EVALUATION OF NANOPARTICLES BY EMULSIFICATION METHOD

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Quetiapine fumarate is a second-generation atypical antipsychotic used in schizophrenia, major depression, and bipolar disorder. As biological half life of drug is 6-7 hrs and that is why frequent dosing is require. To overcome with these problems, Nanoparticles of Quetiapine fumarate were formulated by using Ethyl Cellulose, HPMC K4M & Chitosan as a polymer by emulsification method. Among all the 12 formulations QF11 formulation is optimized, as it shows maximum drug release at the end of 12hrs which suits the controlled release drug delivery system criteria as per our studies, having acceptable particle size, SEM and Zeta potential value. From the drug release kinetics of QF11 formulation of Quetiapine fumarate Nanoparticles dispersion it was concluded that the QF11 formulation follows Zero order drug release with super case II transport mechanism.

Keywords: Quetiapine fumarate, Nanoparticles, particle size, SEM, Zeta potential

TO STUDY THE ADR AND MANAGEMENT OF DUAL ANTIPLATELET THERAPY (ASPIRIN ANDCLOPIDOGREL)IN POST PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY(PTCA)

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Dual Antiplatelet Therapy (DAPT) is the gold standards treatment for cardiovascular complications. The management of DAPT in terms of cardiovascular complications require continuous monitoring as it is associated with increased risk of bleeding. The clinical Pharmacist can contribute to overcome this complication by designing an individualized dosage regimen which effectively reduce the mortality with morbidity in the patients. The study emphasizes on management of DAPT therapy and associated ADRs in post-PercutaneousTransluminal-Coronary-Angioplasty (PTCA). It is a descriptive study carried out in 110 patients from the month of December 2021 to June 2021. The data is collected from patients and is evaluated by comparing with standard guidelines like ACC/AHA and ESC. The information which is cross checked with the determined response to the antiplatelets. A total of 110 patients were involved in the research which accounted for 66 male patients followed by 44 female patients. The majority of the patients involved in the study were between 41-50 (61.18%). The DAPT (Aspirin + Clopidogrel) therapy was prescribed in 67.28% of the subjects Although the remaining subjects were treated along single antiplatelet (SAPT) therapy (Aspirin – 16.36%, Clopidogrel-16.36%). It was observed when the study that the therapeutic efficacy associate with the DAPT therapy is comparatively higher than single drug regimen. The ADRs associated with DAPT therapy was found to be 10 whereas the single drug regimen accounted for 4. The study emphasized on effectiveness and ADRs associated with the DAPT therapy and single antiplatelet regimen. During the study, it was observed that the ADR occurred in the patient associate with the comorbidities and had a longer duration of exposure. The research has emphasizes the importance of monitoring APT regimen from time to time in order to reduce the incidence of ADR thereby increasing the quality of life of a patient.

Key words: Antiplatelet medications, bleeding, percutaneous coronary intervention, major adverse cardiovascular events.